

THE LIFE OF A UNIVERSITY



UNIVERSITY OF BRISTOL

KEY PLAN

1.50



BRISTOL
GRAMMAR
SCHOOL

12

21

BAPTIST
COLLEGE

MUSEUM
AND
ART
GALLERY

25

14

17

26

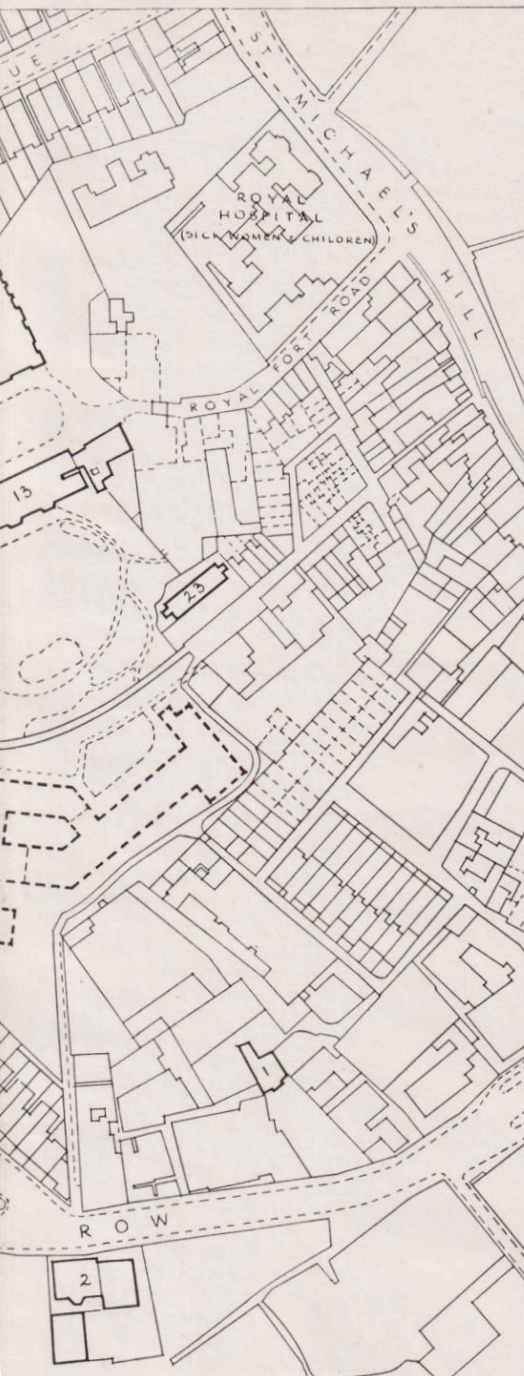
30

20

BERKELEY
SQUARE

PARK
STREET

P A R K



LEGEND

1	ORIGINAL MEDICAL SCHOOL	1833.
2	ORIGINAL UNIVERSITY COLLEGE	1876
3	BOTANY · ZOOLOGY	1880
4	ANATOMY	1880
5	GEOLOGY	1883
6	GEOGRAPHY : FORMER MEDICAL SCHOOL	1892
7	GEOLOGY	1893
8	ANATOMY · GEOGRAPHY	1900
9	BOTANY · ZOOLOGY	1904
10	CHEMISTRY	1905
11	CHEMISTRY · PHYSIOLOGY · PHARMACOLOGY	1910
12	HIATT BAKER BOTANICAL GARDENS	1916
13	ROYAL FORT HOUSE	1917
14	MAIN BUILDINGS : ARTS · LAW	1925
15	ROYAL FORT : PHYSICS · MATHS	1927
16	BOTANY · ZOOLOGY	1939
17	NEW WING : LIBRARY EXTENSION ETC.	1939
18	AGRICULTURAL ECONOMICS	1942
19	UNIVERSITY AIR SQUADRON	1946
20	ADMINISTRATION : TRAINING CORPS	1946
21	PHYSIOLOGY · PHARMACOLOGY	1947
22	CHEMISTRY	1947
23	EDUCATION : GARDEN HALL	1947
24	CHEMISTRY	1948
25	REFECTORY	1949
26	VETERINARY SCHOOL	1950
27	ECONOMICS	1950
28	ZOOLOGY	1951
29	BIOLOGICAL CHEMISTRY	1951
30	ADULT EDUCATION	1951
31	ENGINEERING · (FOUNDATION STONE)	1951



THE LIFE OF A UNIVERSITY

by
BASIL COTTLE
and
J. W. SHERBORNE

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CONTENTS

	<i>Page</i>
A History of the University College and of the University	I 30
The Main Buildings	36
The Library	43
THE FACULTY OF ARTS	47
Classics	48
Modern Languages	48
English	49
History	50
Philosophy and Psychology	53
Economics and Social Study	53
Drama	55
THE FACULTY OF LAW	56
THE FACULTY OF SCIENCE	59
Geography	60
Botany	61
Zoology	62
Geology	65
Chemistry	65
Biological Chemistry	66
Anatomy	66
Physiology	69
Pharmacology	69
The Associated Theological Colleges	70
THE FACULTY OF ENGINEERING	71
THE FACULTY OF MEDICINE	72
Royal Fort House	77
Music	81
Education (Department and Institute)	81

	<i>Page</i>
H. H. Wills Physics Laboratory . . .	83
Mathematics . . .	83
Physics . . .	84
The Dental Hospital . . .	87
Veterinary Science . . .	87
Horticultural Science . . .	89
Long Ashton Research Station . . .	89
Chipping Campden Research Station . . .	90
Adult Education . . .	90
The Refectory . . .	93
Victoria Rooms and the Students' Union . . .	94
Athletics and Health . . .	98
Accommodation Office . . .	98
Halls of Residence . . .	101
Clifton Hill House . . .	101
Manor Hall . . .	102
Wills Hall . . .	102
Burwalls . . .	106
Wraxall Court . . .	106
The Churchill Appeal . . .	109
The Home Students' Societies . . .	109
Gardens . . .	109
Religious Life . . .	110
Colonial Students' Welfare . . .	110
Appointments Board . . .	110
Training Corps and Air Squadron . . .	113
Alumni . . .	113
Memorial Lectures . . .	114
Colston Research Society . . .	114
Founder's Day . . .	116

PLATES

Frontispiece : The University from Brandon Hill.

Facing Page

Pl. 1.	Former Medical School . . .	2
2.	Original University College, Park Row	9
3.	1892 Medical Building . . .	10
4.	Quadrangle and Fry Tower . . .	17
5.	Arrowsmith Tower and Biology Wing	18
6.	Athletic Ground, Coombe Dingle . . .	21
7.	University Tower . . .	24
8.	Entrance Hall, Main Buildings . . .	27
9.	Entrance Hall : Founder's Window	30
10.	Great Hall : Vestibule . . .	33
11.	Reception Room . . .	36
12.	Council Chamber : Benefactors' Shields	39
13.	Main Library	40
14.	Senior Library	43
15.	Fifth-Floor Lecture-Room . . .	44
16.	Private Staff-Room, New Wing . . .	44
17.	Studio Theatre	47
18.	Map Room	50
19.	Hiatt Baker Botanical Garden and 1947 Laboratory	53
20.	Baptist College	56
21.	Western College	56
22.	Engineering School	59
23.	College of Technology	62

	<i>Facing Page</i>
24. Bristol Royal Infirmary . . .	62
25. Royal Fort House . . .	65
26. Royal Fort House : Hall . . .	66
27. H. H. Wills Physics Laboratory . . .	69
28. Physics Building : Lecture Theatre . . .	72
29. Dental Hospital	75
30. Physics Building : Main Entrance . . .	75
31. Veterinary School : Courtyard . . .	78
32. Veterinary School : Biochemical Laboratory	78
33. Veterinary Field Station, Langford . . .	81
34. Long Ashton Research Station . . .	84
35. Numbers 20-21-22 Berkeley Square . . .	87
36. Refectory	90
37. Refectory : Ground Floor	93
38. Senior Common-Room : Lounge . . .	94
39. Victoria Rooms : Pediment	97
40. Victoria Rooms : Great Hall	98
41. Clifton Hill House	101
42. Clifton Hill House : Common-Room and Library	102
43. Manor Hall	105
44. Manor Hall : Student's Room	106
45. Wills Hall : Quadrangle	109
46. Wills Hall : Dining-Hall	109
47. Wills Hall : Chapel	110
48. Wills Hall : <i>The Holmes</i> Gardens . . .	110
49. Burwalls	113
50. Wraxall Court	114

THE LIFE OF A UNIVERSITY

THE record of higher education in Bristol is impressive long before the opening of a University College in 1876. Enthusiasm and enquiry had as their basis a group of ancient schools—the Grammar School (1532), the Cathedral School (1542), Queen Elizabeth's Hospital (1590), Red Maids' (1634), and Colston's (1708); valuable new elements were added by the opening of Clifton College as a public boarding school in 1862, and of the "Bristol Diocesan Trade School" (the nucleus of the Merchant Venturers' Technical College) in 1856. In a city of individual enterprise, philanthropists like Hannah More applied themselves to their personal schemes for the education and general advancement of the poor, or of women, or of the slaves whose plight stuck in the conscience of many citizens. Nor were formal curricula, or long visionary plans of training, the only signs that Bristol had a mind for education. Here was the first free public library to be opened in England, here Siddons and others gave the present Theatre Royal its first sight of great acting, here Jenner the vaccinator was seen, and Humphrey Davy dabbled mirthfully in laughing-gas and much else in the serious "Pneumatic Institute" at the Hotwells. In 18th-century literature, the city had melancholy associations with the poets Savage and Chatterton, and occasioned the early triumphs of Wordsworth, Coleridge, and Southey; indeed, Bristol's far-sighted publication of *Lyrical Ballads* in 1798 was a revolutionary event in the course of English poetry. It is, altogether, not surprising that one writer, rejecting "Bridge-place" as the derivation of the city name, and pressing the claims of "St. Brig's Place" (since Brig was the sister of St. Brendan, to whom the hermitage on Brandon Hill was dedicated), has pointed out that she derived her

name from Brigid, an old Irish goddess with the same attributes as Minerva, and with poetry and medicine as her especial care; so that "no University town in the whole kingdom bears a name more appropriate to a seat of learning than Bristol" !

The Bristol Medical School had existed since 1833. From the time when the Infirmary was opened in 1737, the students there were fitfully given courses of lectures in anatomy; there was an anatomical theatre available for these in the Barber-Surgeons' Hall, the Red Lodge was used in 1797, and a lecture room was afterwards built in Trinity Street. By 1815, the Royal College of Surgeons and the Society of Apothecaries had been founded, and were tightening up the regulations for medical practice; students abounded in the 200-bedded Infirmary, the even larger St. Peter's Hospital, the Clifton Dispensary (1812), and the 30-bedded General Hospital (1832), and when provincial hospitals were put on the same footing as London's in 1822 the way was clear for a student to spend the whole of his qualifying period in Bristol. The first systematic course of regular lectures was that of Thomas Shute, continued by George Wallis; this small school, and others like it, were located mainly round College Green and the Infirmary, and the chief pursuit was anatomy. Finally, in 1833, the Bristol Medical School was formed by uniting lecturers from various schools. The authoritative bodies in London continued favourable, competitors closed their doors within a few years, and the *Schola Medicinæ Bristol*: was fairly launched—at first in King's Square, then from 1834 to 1879 at a handsome brick house in Old Park, still University property but converted into staff flats (pl. 1). Famous names at the School in its early days were those of W. H. Spencer, who invented the binaural stethoscope, and (though his fame proceeded from another source) W. G. Grace.

The School had arisen out of an alliance of like-minded men, and it quickly sought, but never established, a similar alliance with the "Bristol College" in Park Row (on the site of



the Synagogue), which taught Classics and Mathematics from 1831 to 1842, when it was followed by the "Bishop's College," doomed to as short a life. But the School did not lose sight of its stated ideal of 1840, that Bristol might one day be "the seat of a medical university"; and it is pleasant to see that it contributed, financially as well as spiritually, to the formative schemes that began in 1873—though these schemes might lead to the loss of "independence" and to the merging of the School in a larger corporate body.

By 1872, Prebendary Percival, Headmaster of Clifton College, was championing the claim of provincial towns to possess universities, and had written a pamphlet to outline his arguments. His original idea was for the wealthier Oxford colleges to convert two or more non-resident Fellowships into Professorships, to be held in the great towns for periods of ten or twelve years; every town chosen would have a sufficient number of Professors to "afford something like an adequate university curriculum," and students would be entitled to a degree after such a course and its examinations. Though this plan was completely altered, he came to feel that a Bristol college should be the beginning of the movement. In 1873 the Medical School, at a faculty meeting, changed their policy of rebuilding their premises and determined to work with those who were trying to establish a college, of which the School might well form a vital part. Percival had already helped to found the Clifton Association for the Higher Education of Women, by which women of Clifton were given instruction in classes of university standard, the secretary being Catherine Winkworth, translator of German hymns; and the foundations of the High Schools for Girls in Clifton (1877) and Redland (1882) were largely due to him. As the university movement grew, with a circular to the public on the advantages to be gained by the South-West and South Wales, and with "feelers" to the not hostile Museum and Library, the hand of a lasting and happy patronage was first felt—Balliol College offered, through Jowett, the Master, its cooperation and financial

help; and New College, through Jowett's advocacy, followed suit. So on 11th June 1874 the promoters arranged an impressive meeting in the Victoria Rooms, eventually to be the home of the University Union. It is exciting, now, merely to read the list of great men who were present—the elder Temple, not yet Archbishop; Jowett and the Warden of New College; Catherine Winkworth and the noble Mary Carpenter; kindly-disposed scholars from London University and Owens College, Manchester—and the wit, the gusto, the good-fellowship, of the occasion swept all difficulties aside. Yet the gratitude of the University is mainly owing to local men; Percival went on to the See of Hereford, but his greatest supporter, Lewis Fry of Goldney House, was to stay as the loved friend of the young College throughout its early, troubled days, and its successor will remember him and his brother Albert with more honour than one named tower can enshrine. Now, also, in the lists of those present, or sympathizing, or subscribing, we find five bearing the name of that numerous family who in the 20th century were to adorn, to ennoble, and virtually to found, the new University by constant benefactions of a princely and bewildering generosity; it is the name Wills.

The speeches that day outlined the policy intended for the college. The Mayor pledged the support of the city. The Dean, explaining the growth and scope of the scheme, pointed out that the support of the two Oxford colleges was conditional on several wise provisions—that both should be represented among the governors; that literary courses and general lectures should be given, as well as scientific instruction; that the needs of adult education should be specially borne in mind; and that women should be eligible for attendance at classes other than medical. Of this last, the women took full advantage, and often outnumbered the men; and even the restrictive clause against them in Medicine was withdrawn in 1907. As for the required staff, the Dean's estimate was modest indeed—a mere half-dozen; but they would hold chairs, and they must be attracted by good stipends. He stressed

that Bristol's was the main task of raising funds, though the college would confer benefits on a wide area; it was to be a "College of Science and Literature for the South and West of England and South Wales"—though the onset of the three Welsh colleges radically altered its scope.

After the President of the British Association had spoken in support, with praise for the breadth of the studies and with a plea for much more money than the suggested £25,000 capital and five years of £3,000 subscriptions, Jowett explained Oxford's part in the undertaking. The movement "was in the air"; classes, schools, museum, and library already existed in Bristol; Oxford—and Cambridge, too—had no jealous wish to retain all higher education. He said that the promoters wanted to create a local university, one to bring together the scattered elements of Arts and Sciences, one where studies, like men, could get on better by getting to know each other. The students would be poor in pocket but zealous for learning, and it was almost as wrong to deny them knowledge as to deny bread to the hungry. Though a local university could not compete with the older establishments in certain ways, yet it had three big advantages: students could live at home (a blessing that now strikes the authorities as not unmixed), the studies of Medicine and Engineering could best be prosecuted in large towns, and women could be catered for adequately. Bristol would one day be as proud of its university as of its cathedral. He emphasised the *local* nature of the new foundation, but this ideal has now been left far below.

E. A. Freeman said that, even as St. Mary Redcliffe and Bath Priory Church were lanterns of the West by reason of their vast areas of glazing, so the University might become one through its cultural influence. When the famous New Zealander comes over to research amid the ruins of London and the East, we in the West, where the sun shines later, "may be still flourishing and be ready to welcome that distinguished foreigner, and reward his antiquarian researches in eastern England with an honorary degree in the University

of Bristol." Temple stressed the need for studies directed by a good teacher, a man devoted to scholarship, so that, beyond all the help that books alone could give, the students might catch "the infection of his example." The remaining speakers shrewdly pleaded for more funds, the want of which were soon to bring trouble and discouragement to the young college; but the prevailing temper was one of enthusiasm. Later, West Country peers and M.P.s met in Westminster to further the cause.

This was a happy start; and the subscriptions, though inadequate, were promising. At the head of the list, below the two Oxford colleges, stood the gifts of £1,000 from the Merchant Venturers of Bristol and the Medical School. The Medical faculty wavered for a time between aloof alliance and amalgamation, and in 1879 decided on a mere affiliation and retained its own governing body; but it was assigned the first new building on the College estate, and was fully incorporated in 1893 as a faculty of the College, a status which continued when the latter became a University in 1909. Evening classes in Engineering created some tension with the Society of Merchant Venturers—the Trade School, which they took over in 1885, had an established tradition of such instruction, but they now found themselves with a competitor. By 1895 the School Governors sought to drive the Engineering classes out of business for this "encroachment of their curriculum," though they were willing to surrender their own literary instruction. The College Council desired to parley in 1897, "being convinced that there is abundant scope for both of them in Bristol," but in the same year the Merchants, observing how far apart they stood, feared "that any conference between them would be useless." Though several compromises were almost reached—such as the College's 1900 proposal that they should federate as "The West of England University and Technical College"—this dualism continued until the granting of the Charter, since when, the friendship of this enlightened Society has been of the greatest value.

One other great corporation stood high on the list, the



Clothworkers' Company, by whose assistance textile classes were started at the woollen mills in Stroud, and later in Trowbridge and Frome. Among individuals, Joshua Dixon of Winslade proved the most munificent, but mainly Bristol citizens, firms, and bodies like the Anchor Society, rallied to this new cause. The Governors were named—not only the higher subscribers, but (*ex-officio*) more than sixty gentlemen ranging from the chief citizen of Aberdare and the president of Carmarthen Presbyterian College to the Master of the Stannaries and the Mayor of Penzance—, and on 9th August 1876 the Board of Trade licensed the incorporation of University College, Bristol, the word “Limited” being amiably omitted. The baby college set out on its difficult path in the autumn, with the Dean of Bristol as its President, and a staff of good men whom Jowett helped to choose.

It seems an almost pitiful start. Even the mere two professors and four lecturers found themselves cramped in a rented (for £50 a year) Georgian house on Park Row, previously devoted to the deaf and dumb (pl. 2). The chair of Chemistry sounds the more prosperous; one Leipner offered Botany, Zoology, and German; ladies and gentlemen attended separate classes (and lecturers) for French; Professor James Rowley justified his chair by lecturing in both Modern History and Modern Literature, the latter from 12 to 1 on Tuesdays and Thursdays—*still*, after 75 years, the hours for Modern Literature lectures in the English school! But, in addition, classes began at once in Mathematics, Mechanics, Physics, Geology, and Economics; and other subjects were in being soon after—Classics, Law, Textiles, Logic, Hebrew. But certain subjects, like Architecture, were liable to become casualties, and in 1879-80 the Law course would only “probably be given.” Students could register for one guinea, and then attend as many classes as they pleased, on payment of about three guineas for each subject, and an extra sum for laboratory work. There were scholarships of as much as £50 a year, and scholars had to attend at least three courses. The courses must often have produced a good all-round student,

but the syllabus fills us with misgivings over some subjects, and over French in particular: perhaps some selected poems from Alfred de Mussett (*sic*), or a wretched novel by Erckman (*sic*)–Chatrian, or “part of the first act” of a play by Scribe, together with translation “from and into” which sounds flatly elementary. But standards improved, with the appointment of more specialists. In the second session, 1877-8, the College had an inspiring Principal, the great Alfred Marshall, who had just married the young economist, Mary Paley, and there were nine other professors and lecturers; by 1878-9 there was a staff of fourteen, including Mrs. Marshall—a tribute both to the growing number of women students and to this wonderful lady, who said that the College was “the first to give women an equal share in education.” In the first session, women day students outnumbered men by two to one, though men were in the majority at evening classes; but herein lies the early weakness—there were always twice as many evening students, who were really the life-blood of the little college, and there was every danger that the “undergraduates” proper would have no feeling of cohesion. Some worked for certificates, perhaps little prized at first by responsible bodies; some, for the frank love of learning; and some, eventually, for external degrees of London University. But they had the pride of pioneers, even in their second-hand premises. The numbers rose encouragingly for five years; in 1881-2 they began to decline, and by 1887-8 they were almost back where they had started eleven years before; even in 1897-8, the total (day and evening, and exclusive of student teachers and the Medical School) was only 375, where it had been 337 in the first session. Then numbers began to rise, and there was increasing evidence that students were taking fuller and more balanced courses.

Extra-mural classes at first showed the same trend. The first lecturers sent out were in answer to requests from Bridgewater in 1877, whereafter literary and scientific lectures arranged at places like Cardiff, Newport, Cheltenham, Bournemouth, and Weston-super-Mare seem to have been



successful. There are reports of intelligent artisans at Newport, and of absent artisans at Bath. But district classes, started in 1881-2 at Redcross Street, and soon extended to three other centres, were collapsing by 1888, when there were only 24 entries. The classes moved to Lawrence Hill, but were abandoned in 1892-3 through lack of students; yet the courses, technical and commercial, sound realistic enough to attract the ambitious workers for whom they were intended. In 1890 Lloyd Morgan began a course of popular lectures on "Our Mind and Body" in East Bristol; the entrance fee, one penny, was not prohibitive, but poor attendance wrecked the course after four lectures. In fact, from 1893, the city and the Merchant Venturers were far more successful in providing evening continuation classes, and the Workers' Educational Association established its machinery in Bristol in 1907.

Though there could be no ambitious plans for buildings, it was urgently necessary to get away from the makeshift college in Park Row. The Council in 1876 bought an acre of Tyndall's Park—a purchase vital for much good, and for perhaps a little evil. The small plot abutted on to a cul-de-sac, "Museum Road," which ran up to the Grammar School; to the south, cutting the land off from Queen's Road, was an ugly accretion of buildings—a drill hall, a club, a blind asylum, and an unaccountably Venetian museum; to the north lay the genial pleasantries of the Park and the pink revival-Tudor Grammar School: the foundation-stone of the new School buildings was laid as late as 1877, but they were opened in 1879. A number of Grammar School benefactors and governors were also friends of the College, and the two piles rose aptly side by side. No-one at the time can have dared to envisage the present happy state of affairs, when the University has, with the utmost tact and good taste, swallowed up nearly the whole of the great commanding triangle bounded by University Road (new-named), Woodland Road (new-built), and Queen's Road—Park Row. The southern frontage, after the old buildings had been demolished,

craved triumphant treatment and has certainly received it; but the site is entirely a steep hill, and a pretty crowded one, and the northern apex has been slowly and awkwardly crowned with a jumble of buildings which have picked up the pink idiom of the Grammar School. And, the purchase once made and the site developed, farewell all chance of a garden university! Henceforth it must soar over the red tiles of the city, or seek costly shelter in the high-class properties round the Park; yet is this a valid objection?—the towers and spires below, the green beauty of St. Michael's and Brandon Hills, the respectful glance of every passer-by up to the great Tower, the sense of being a truly civic university and yet so much more, are ample compensation for not being academically snug and remote up near the Downs, where acres would have been so much cheaper.

The first of the new buildings was a brick "temporary" home for the Medical School, opened in 1880 and still occupied by Anatomy. Until 1879, the Medical School was something of a liability. The *Lancet* in 1877 attacked the teaching in the School; and the dissatisfaction with its students at the Bristol Royal Infirmary, and their consistent failure at the Royal College of Surgeons primary examinations, might have had the School disfranchized. In 1878 the Senior Physician at the Infirmary threatened to open a rival establishment, and blamed the School for not linking up with the College. This forced their hand, and led to the 1879 agreement; whereafter, the School prospered in numbers and repute. Parallel with this brick hut, further north, a larger building in stone was opened in the same year for Arts, Mathematics, and the administrative work. When, in 1883, this block was given an extension at right angles to the south, to house Science and Engineering, the Park Row premises were relinquished and the College concentrated its tiny forces on one site. There were the makings of a quadrangle, and soon a garden adjoined to the north; Professor Leipner and his department kept it in trim, and students remember how it graced their leisure and lifted the scent of pinks

through the lecture-room windows. The entrance to the grounds was by a little wicket and past a rockery; the various paths were edged with a cycle of flowers, and subscribers gave sums towards the upkeep. The academic staff and their wives were all acquainted, and made a circle for entertainment both stately and informal—astute is he in 1951 who knows 25% of his colleagues; and the students benefited from this small, determined society, which made its own amusements. Students from outside Bristol lived in authorised lodgings, or were entertained by members of the staff, and the latter arrangement gave them the sense of belonging to a residential college; there were musical evenings, whist, book teas, and quotation parties—the last a form of merriment which that less pampered age recorded as “popular.” When Alfred and Mary Marshall came to Bristol in 1877, they set up in a house in Apsley Road, with a small back-garden where they contrived a kind of wall-tennis, to which students were regularly invited. His income was £700 a year, on which they were expected to entertain considerably; they therefore kept two servants (at £20 and £12 a year), and when a Council meeting was rounded off by a dinner party of about twelve, the greengrocer came in to wait. Mrs. Marshall had much “calling” to get through, but started as a day lecturer as soon as she could, while her husband took only the evening classes in Economics, for business men, trade unionists, and women; one woman attended because she picked up “such good after-dinner conversation.” The Apsley Road house also contained the baffling newness of gas fires, and Jowett once asked at breakfast where Mrs. Marshall obtained her coal, since his bedroom fire had remained alight all night. Marshall found that administrative work cut exasperatingly across his writing; but he gave the College a good start, and continuity, by staying on until the right successor had been found, William Ramsay, already Professor of Chemistry, who laid the surest foundations for the eminent scientific research of the University. The first mention of any kind of research scholarship

is in 1897, when a student was awarded £20 to prosecute research work in Botany.

If we look back on these shaping years, we can share the excitement of the few privileged men and women who knew they were beginning a tradition, and who had a humble but stirring sense of opportunity; and we must share their gratitude, which they so often mentioned, to Lewis and Albert Fry, J. W. Arrowsmith, Philip Worsley, Fenwick Richards, and others, who for thirty years kept the struggling College on its feet until the "Sun in Splendour" of the Wills family rose on the promising scene. The first Lady Tutor began her helpful duties in 1899. In the Women's Reading-Room, comfortably appointed and with celebrated women gazing in frames from the walls (they had adorned the Chicago Exhibition of 1893), the Women's Literary Society met for papers and discussions, including mysterious affairs called "Sharp Practice Afternoons"; in summer the Society went on an expedition by horsedrawn charabanc, and spent afternoons at the houses and gardens of patrons of the College. Geologists went off to their natural haunts near Weston-super-Mare, or to artefacts like the stone circle at Stanton Drew. From time to time the laboratories were thrown open to visitors. There were concerts, and Lloyd Morgan, the Principal, sang in his fine baritone, just as he did at his wife's drawing-room receptions, when there was room for all the staff and their wives to meet and praise "the singing Principal." Professor Ryan, who jocularly controlled Engineering, once introduced the future Dame Clara to a concert as "Miss C. Butt, who now is making her D. Butt". After 1892, the Day Training students ran concerts and plays, which were open to the senior foundation. But the College dances sound the nicest feature of all: Webb's well-known little dance-band, a specially-appointed M.C., and chaperones; a whole morning during which the young ladies decorated the hall, cut sandwiches, and made great innocent jugs of lemonade, the porter and his wife proving a great help at such times. (Regrettably, "later the dances



became less homely," and a local confectioner took over the catering). Everyone enjoyed the inaugural lecture at the start of the autumn term, given by the latest Professor or by a guest like the Astronomer Royal . . . ,

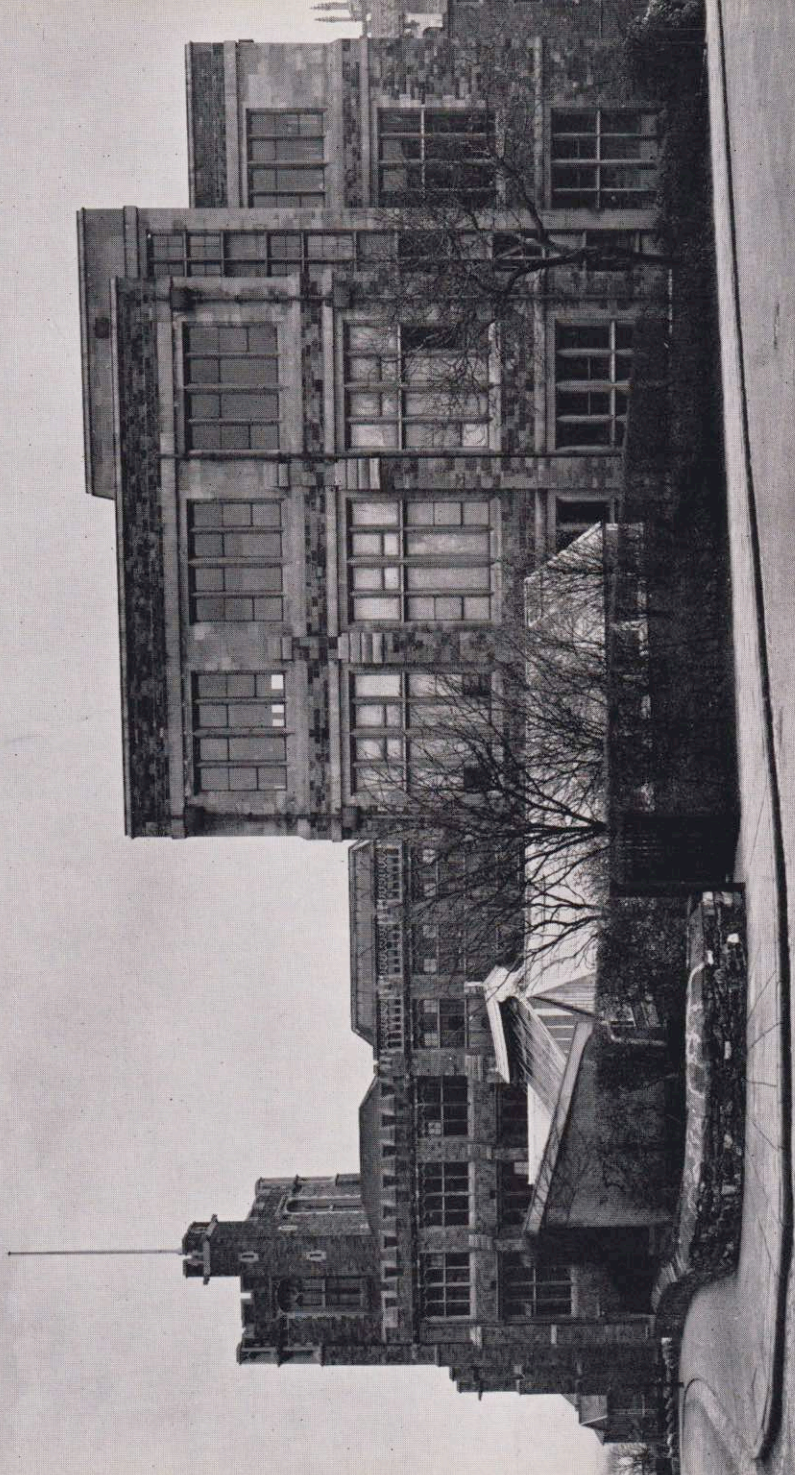
Yes, it was no doubt bliss to be alive, but each endeavour was dogged by poverty. Old and new friends did their best: Balliol granted another five years of £250, partly for the Political Economy chair; the later Balliol contributions were in fact given by Jowett personally, and T. H. Green, a Fellow of Balliol and Dr. Symonds's son-in-law, gave sums from his private purse. The Medical Dramatic Club and the Clifton Philharmonic Society gave small amounts. W. E. George (whose houses were to form so large a part of Wills Hall) came forward with £500 for land, and Charles Bevan, a solicitor, left £1,000. All this was before 1890; but, though the Chairman of Council could always report happily on the work achieved, the Treasurer had cause for nothing but complaint. In 1888, "the institution at present (is) marching on the high road to bankruptcy"; every year was one of real peril. The Commissioners who visited Bristol in 1896 admired the work but were unable to recommend that the College should receive any share of the extra £10,000 voted by Parliament, and their reason was simple: the Chancellor of the Exchequer had ruled that no grant should exceed a quarter of the local income, and in Bristol it already did so by 8%. The conclusion was that the citizens were not doing their share as were those of the prosperous North. Yet the Mayor gave a lead in 1887 by presiding over a public meeting at the Guildhall, and slowly the city became conscious, and proud, of its College. The College tried to spread interest and win friends by founding the Bristol University College Club, which—alas!—ran only from 1883 to 1887; and, in 1882, by instituting Honour Certificates and the title "Associate of University College, Bristol" for work of distinction—by 1909, when the title lapsed, 114 Associates had been made.

Desperate schemes were suggested—that the teaching of

Literature, History, and the Classics should be scrapped, and the instruction limited to scientific and technical subjects; endowments were somehow scraped together, a Sustainment Fund with lady canvassers, and a Students' Endowment Fund, to which these rarely affluent beings contributed, sounded encouraging (though the total was modest), and the ruin was averted. Yet when a suitable motto was being discussed, and "Knowledge is Power" was suggested, a member of the Council observed that "College is Poor" would be more to the point. It was disturbing to know, year after year, that there might not be money enough to pay salaries at the end of a term, and on one occasion in the 'eighties a dramatic and anonymous cheque for £1000 saved the College from closing down! Commendably, they tried to keep to their original plan of appointing good men to chairs, rather than staffing with indifferent lecturers. But in 1886 a reduction in salaries was necessary; they were slightly improved in 1905. There was no superannuation scheme. In general, the number of students, their contribution in fees, and the income from other sources, rose so gently from 1876 to 1909 that the College may be said to have been in constant anxiety over finance.

But its wings were not clipped. New departments and buildings were rising throughout this period—engineering firms, to which students were articulated, helped to found a Department of Engineering in 1878, and its 1893 building began the turning of the third side of the quadrangle. There was to be a fourth side to the quadrangle, which would have been hopelessly jostled; this was luckily averted. A little nearer the Museum, a new Medical building, with bold "perpendicular" windows and burly pinnacles, was opened in 1892 (pl. 3), and in the following year the Medical faculty gave unity to the College by becoming a full member; hereafter building ceased until the new century, but most of the group had its own generated electric light by 1894.

In 1892 a Day Training College for women teachers was opened in Berkeley Square and affiliated with the College.





By 1889, assistant teachers in elementary schools were being given short courses in preparation for their Certificate examinations. A Secondary Training Department was added in 1902, and a Men's College in 1905, the whole forming the nucleus of the present Department of Education.

In the absence of funds and accommodation at University College, there were few organised social activities which were permanent enough to have lasted until today, but a Debating Society (the parent of the Union) was founded in 1878; the sexes debated apart. The 1883-4 Calendar mentions a library, but facilities seem to have been slight; the honorary Librarian had scanty funds at his disposal, and E. J. T. Exley's bequest of scientific books and journals (6,000 volumes in all) was the happiest thing that befell the small collection. But in 1906 £500 out of the special Treasury Grant of £850 had to go to the Library, and another £600 was voted in 1907.

Professor S. H. Reynolds, who began as Lecturer in Geology and Zoology (and sometimes Botany) in 1894, has left a sorry picture of conditions then obtaining: little accommodation and equipment, long hours, low salaries. His two subjects shared a lecture-room with several others; his own room was also one of the two laboratories, so that whatever he was working at had to be moved off the table for someone else to use it. All the geological specimens were in one cabinet, and the books of his two departments were on a couple of shelves; no periodicals were taken. Even in the early years of this century most of the apparatus in the Physics Department was the personal property of Professor Chattock. Working hours were something like 9-1 and 2-5 most days, with an occasional 7-9 and no respite on Wednesday afternoon or Saturday morning; it is hard to see how men thus forced to spread themselves ever undertook any research, yet they *did*, and the letters "F.R.S." glow after the names of several. On the lighter side, Reynolds saw with approval cricket, football of both codes, hockey, and tennis; the staff played in the teams, and even captained them—whether by courtesy or merit, is not recorded.

Engineering was faced with like difficulties. Soon after the course began in 1878, the Professor was allowed to engage Hele Shaw, a student, as assistant in Mathematics and Engineering, on condition that the College were put to no expense; so the Professor relinquished certain fees! Within the first few months £65 was spent on apparatus; Sylvanus Thompson, who became a pioneer in Electrical Engineering and Principal of Finsbury Technical College, was complaining in 1882 of lack of equipment, and six months later received £257 out of the £685 he needed. In 1883 Hele Shaw was himself granted an assistant and a boy for setting up apparatus and drawing lecture diagrams, and next year his request for a £500 testing machine, which would bring in an income in fees of up to £50, was sanctioned; a gas engine followed in 1885. They asked for a well-lighted drawing room, and spoke of the "forbearance" needed on both sides when Physics and Engineering shared one lecture-room. How far resignations at this time were due to discouragement, it is now impossible to say; but Hele Shaw moved to a chair in Liverpool, and similar appointments from the Bristol staff were all real promotions, suggesting that the College gave its teachers good training for the highest posts. By 1891 the Engineering premises were filled to capacity, and the maximum number of students had to be fixed at 40, but the 1893 extensions allowed an additional twenty, besides the badly-needed drawing-office and workshop, steam-engine, boiler, dynamo-electric plant, reading-room, foundry, moulding shop, etc.; while Physics and Engineering were at last separated into two chairs. In 1909, with the founding of the University, came the move to the Merchant Venturers' building in Unity Street.

The resignations, and the apparent discontent, which have just been mentioned certainly affected the other departments. The precariously-appointed lecturers felt bound to ask for some security of tenure. A French lecturer resigned in 1900 after being refused a rise; the Principal had to become a Dean from 1887 to 1890. Such economies twirled the College

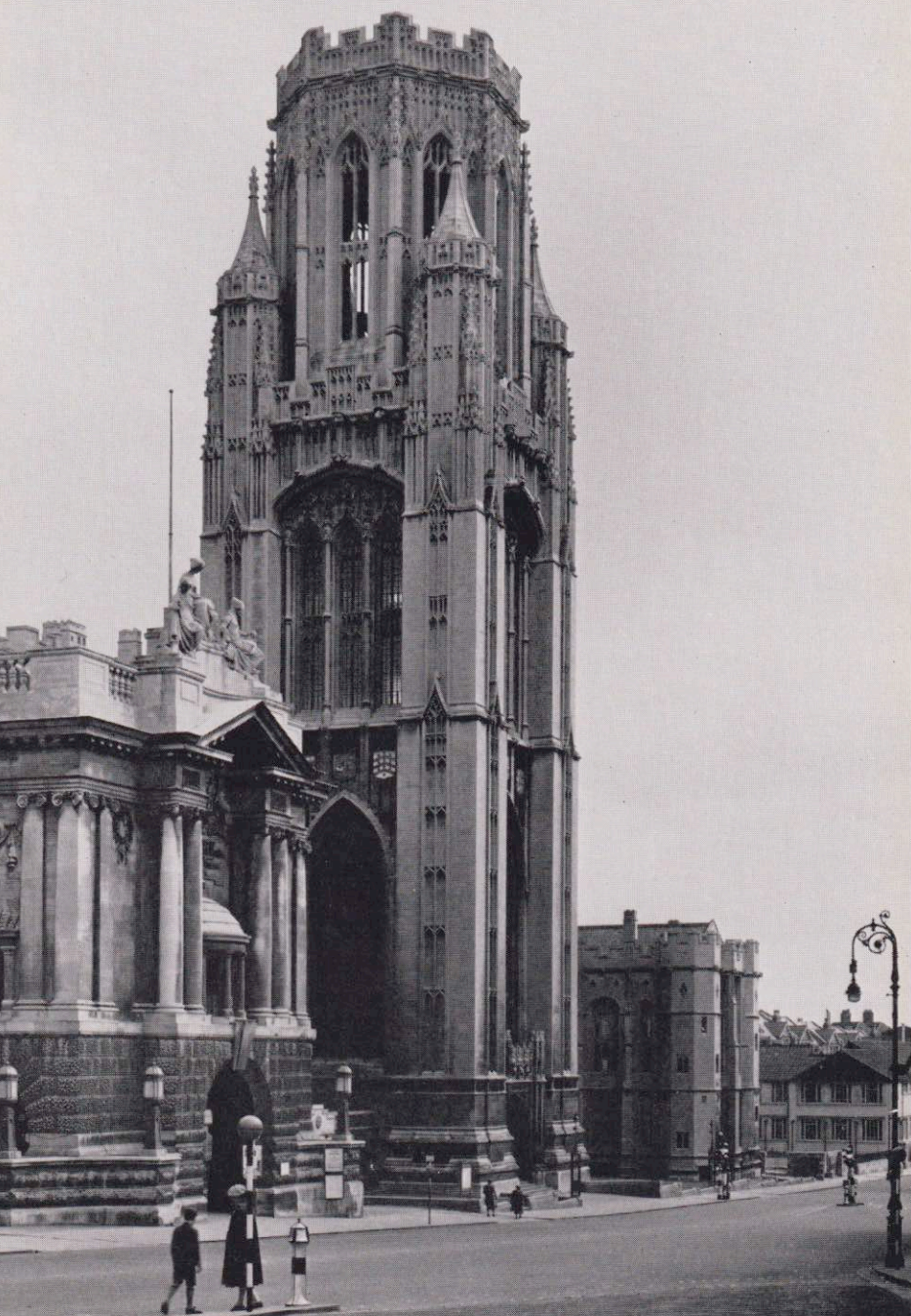
in a vicious circle; the faithful members were overworked and discouraged, the ambitious ones naturally bettered themselves, and all the less students came flocking. Yet Council, while deploring this understandable exodus of their best men, constantly reported to the Governors that good work was being done—in some departments, better than in any other provincial college—, and cheaply for the student, who could get a degree for less than £40 in 1900. However, the ill-paid posts went on attracting scholars, and the early lists of articles written, and researches carried out, by members of the Science staff are impressive (though almost nothing was done in Arts). The rewarding title of Professor Emeritus was instituted in 1895.

One of the first signs of coming prosperity was seen in 1884, when 220,000 people paid for admission to an Industrial and Fine Arts Exhibition, held in and around the Rifle Drill Hall; the profits, £1,520, were handed to the College. In 1889, to everyone's joy, Council's efforts were rewarded by the Government with a Treasury Grant of £1,200 a year, which was greatly increased in 1904. Not to be outdone, the city, through its Technical Instruction Committee, voted a capital sum of £2,000 on condition that three civic representatives were added to the Governors, and three years of £500 for Free Studentships. When the Bristol Athenaeum Society wound up its affairs in 1890, its assets were handed over to the College. As the private College slowly changed into a public institution financed in part by city and state, a measure of official recognition is seen in the requests to the College to appoint representatives on the governing bodies of many local schools. The last general appeal for funds was made in 1896. There were six anonymous donations of £1,000 between 1899 and 1905, and two Wills donations of the same sum; and in 1899 Vincent Stuckey Lean bequeathed £5,000. It was a unique year; the accounts balanced. Here-upon building could begin again, and by 1900 the Stuckey Lean wing (damaged in 1941) ran out to the road and closed the third side of the quadrangle; it contained a large hall

and, at length, a library. Finally, in 1899 the University College Colston Society was formed, to meet yearly at dinner on Colston Day and to collect funds for the College. It was apt that this should be done in memory of the great and good Edward Colston. Dinner was served in the College hall, when the amount raised during the year was announced by the year's President; and ladies were invited to hear the after-dinner speeches from the gallery, coffee being served on their arrival. The first two dinners brought the College £325 and £400.

Plainly, the College had turned the corner; it was approaching the fulfilment of its old aim, the earning of University status. But the last years of the old century kept a kind of cosiness, an intimacy which the grown University could never enjoy. There were so few teachers, and the greatest were so selfless, that they were known and loved devotedly. When the lecturers' faith wavered, citizens were at hand to inspirit them; when Lloyd Morgan consulted Albert Fry about a post at Cardiff, he received the grave reply, "You ought to stay on with us till you see Bristol the centre of a University"—advice which Lloyd Morgan followed to its logical conclusion of the first Vice-Chancellorship. Staff members and their wives recalled the delightful dinners and garden-parties with the Frys at Goldney House and the Worsleys at Rodney Lodge, and the opportunities of meeting Jowett and the other heroes of their calling. We hear how lightning in 1892 hurled some masonry through a roof and inconsiderately separated a student from his experiment, though to the detriment of neither; how interested everyone was in Professor Chattock's X-ray experiments; how nurses' examinations were held there, so that the corridors flitted with their white uniforms. The British Association met in Bristol in 1898, and used rooms at the College for much of their business; long afterwards, scientists remembered how attentively they had listened to the bogus address by the notorious de Rougemont.

With the new century, confidence increased, and all the





important declarations of the College have one theme—the granting of the charter for a University. A Committee of Bristol citizens was formed for this end, and Percival spoke on the project at the Governors' meeting in 1901; Jowett, elected President in 1891, had not long survived in office, and had been succeeded by Percival—to whom the College owed so much. The future Viscount Haldane spoke at the third Colston Dinner in 1902; there must be more universities, and the West of England was without one. When established, it must attract not only the rich, as did the old universities, but “the people generally.” To culture must be added the industrial and commercial needs of the people; but not of Bristol only—the whole of the West must be considered, and there were already institutions with whom cooperation must be sought. Haldane clearly had in mind a West of England University, with a senate or court in Bristol, and with units in Southampton, Exeter, and Reading; but, just as with the original promoters when they tried to supply the requirements of South Wales, the scheme has turned out otherwise. Haldane's long friendship with the College and University was crowned by the Chancellorship from 1912 to 1928.

In 1905 M. W. Travers, Professor of Chemistry, prepared a pamphlet on the need for a university and the principles to be observed in its constitution. He drew his comparisons from the ten new universities and colleges in England, with melancholy results for Bristol; its total income, £10,000, was the lowest—even below Southampton; so with local contributions—£670, embraced under the simple and pleasantly ambiguous head “City (mean for eight years).” In a list of Government grants to thirteen institutions, Bristol was bottom but two. Yet, with its 360,000 population, it was the largest city in England without a university; the 1,416,000 of the three neighbour counties, and the 3,000,000 of the six counties of the West, made it even more deserving. It was a seaport, in close touch with the Empire; and, in Clifton, it possessed a fine residential quarter. Apart from the general

advantages, to state and individual, of a university, Bristol had particular features: its variety of industries, requiring specialists and research; the agriculture of the fertile area around; its business houses, with scope for a Faculty of Commerce; its medical institutions, with exceptionally good facilities for study; the theological colleges, which might be provided with a Faculty of Theology. The University must be in Bristol, and its government "in the hands of men who have large interests in Bristol."

Finally, in 1907, Professor Francis Gotch, a Bristolian at Oxford University, after distributing prizes at the Faculty of Medicine, spoke persuasively on the matter. When would Bristol, like Liverpool, "attain its educational manhood?" In other cities, the inhabitants regarded their universities with pride and responsibility; a mere college stimulated no such feelings, and they must not think him "ungenerous or discourteous" if he told them that, educationally, Bristol was still "poor in prestige"—not through lack of buildings or equipment, or good teachers, or successful students, but because, in this time of educational change, critics would look on Bristol as "a college which was unable to face University responsibilities."

Meanwhile, two new buildings were added to the precinct. In 1904 the north side of the quadrangle was completed by an extension to the road, including the small polygonal Fry Tower in memory of Albert Fry; this addition housed the History department and a Women's Common Room (pl. 4). In 1905 a block was built on to the east of the 1880 Medical building, and the quadrangle was given its fourth side by iron railings and gates; the general building-scheme was now regarded as complete, and started again only with the granting of the charter. But even in those constricted times the lecture-rooms heard some surprising courses which have since perished: Arabic, Syriac, Coptic, Egyptology—Flinders Petrie had two Bristol-trained assistants at the British School in Egypt, and the Reverend de Lacy O'Leary brought distinguished scholarship to the Committees of Semitic

Studies and of Biblical Archaeology and Philology. Italian, Burmese, Hindustani, and Marathi have disappeared from the curriculum, and Music has only just been reintroduced; hard work and interest in Archaeology came to nothing, and a Faculty of Theology was not the foregone conclusion it seemed. Evening lectures for the public were given in the large hall by the academic staff; there were more scholarships available, including one for Literature specialists in memory of "Hugh Conway." The exigencies of the London degree courses had tidied up the syllabus in most subjects; English students now revelled in Anglo-Saxon and Gothic. But there was an undercurrent of restlessness; examinees had to travel to London and compete with "internal" students, and it was not merely among the teaching staff that the murmurs of change could be heard.

The 1905 pamphlet was widely distributed, but money or promises were to no great extent forthcoming. But the climax came at last, on 14th January 1908, when the Colston Dinner was held in the large hall. "The President of the Society was Mr. George A. Wills and in his after-dinner speech he said he had received from his father (Mr. Henry Overton Wills) a letter which he would like to read. It contained an offer to contribute the sum of £100,000 to the funds for establishing a University in Bristol, provided a Charter was obtained within two years. Everyone in the hall jumped to his feet and cheered, table napkins were waved and the excitement was intense. It seemed like the end of all our financial troubles, but, of course, there was a good deal of spade work to tackle."

When King Edward VII and Queen Alexandra visited Bristol on 9th July 1908, the Council and Senate presented them with an address hoping that "our city may shortly be in a position to crave of your Majesty the grant of a Royal Charter"; they mentioned how Bristol's fame in education had started when the future King Henry II was entrusted for four years to Matthew of Bristol, for instruction "in letters and in all noble conduct"! The College reached a full agreement

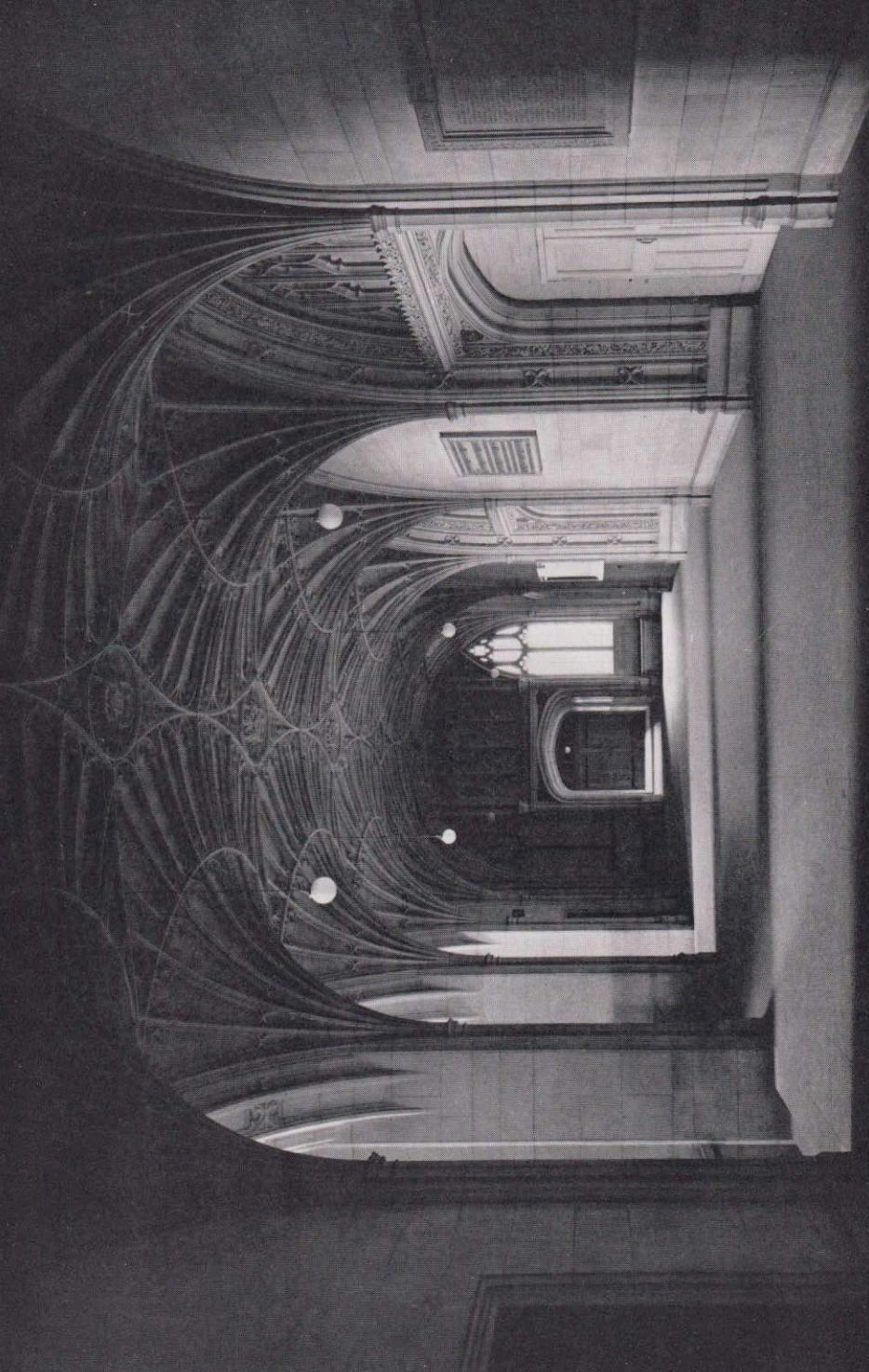
with the Merchant Venturers, whose Science teaching moved up the hill, while the new Faculty of Engineering went down to Unity Street, and thus matters rested until forty years later, when the faculty was severed from the Technical College. The City Council granted a penny rate, Henry Overton Wills was nominated Chancellor, and the University Charter was granted on 24th May 1909.

With that, and with a capital of £250,000 (including the value of structures and equipment), buildings began to rise. A great block for Chemistry and Physiology, along Woodland Road, was opened in 1910, giving to the University excellent laboratories and to the city a new landmark, the Arrowsmith Tower (pl. 5), in memory of the tireless friend who had originated the Colston Fund and so much else; his own workpeople provided the commemorative tablet. The design and fittings of the building were praised by many scholars, and have stood the test of time.

The College had set apart three little common-rooms—men's, women's, and Medical; and games were played on Durdham Down. The new University expanded these facilities as best it could. A group of lecturers got up a guarantee fund for the students to rent a large room over a restaurant in 60 Royal Promenade, Queen's Road, together with a basement, as lounge, billiard-room, and dance-hall; the outbreak of war in 1914 ended this arrangement. A three-day fête at Clifton Zoo in 1908 raised £900 for an athletic ground; one was leased at Horfield, but proved unsatisfactory. A new ground at Westbury was given by Sir George Wills in 1911, and a pavilion was built; Suffragettes burnt it down in 1913, but it was at once re-erected, and the ground has now grown to the pleasant estate of Coombe Dingle (pl. 6).

Arms were granted on 4th December 1909, of "argent on a cross quadrate gules the arms of the City of Bristol between in pale a sun in splendour (for Wills) and an open book proper, leaved and clasped or, and inscribed with the words





Nisi quia Dominus, and in fesse to the dexter a dolphin embowed (for Colston), and to the sinister a horse courant (for Fry), both of the third." The inscription on the book is the Latin opening of the 124th Psalm, "If the Lord Himself had not (been on our side. . . .)"; and the motto granted with the arms is "Vim promovet insitam," from the fourth Ode of Horace's fourth Book and meaning "(Learning) promotes one's innate power." It is perhaps a pity that the University did not ask Heralds' College for *murrey*, as in the arms of the University of Wales, instead of *gules*, for this rare deep red would approximate to the Bristol Red with which the University has since been resplendent. When the colour of the new academic hood was to be determined, none was considered so apt as the dark scarlet of *Lychnis Chalcedonica*, otherwise "Flower of Bristowe" or "Nonesuch"; in any case, even in 1530 "at Brystowe is the best water to dye red". So the handsome flower was honoured; the hoods took the hue, the new magazine with the red cover took the name "Nonesuch," and its grey successor bears the same title even today. No distinction was made between the hoods of different faculties—"Universities have become so numerous that it is a more important matter to know to which of them a graduate belongs than in what set of subjects he has taken his degree." From the start of the session 1910-11, undergraduates were required to wear cap and gown in the precincts of the University.

The University enjoyed from the first the goodwill of its "rivals." Birmingham and Cardiff were Bristol's best friends, judging by their numerous meetings at football and cricket; and Reading provided opponents at rowing. Birmingham was extremely cordial; in 1908 Sir Oliver Lodge, as Principal of the University there, sent his good wishes for a University which should be worthy of a noble city "and of the great Province of Wessex whose higher educational needs it will supply. It will be no rival, but colleague and co-worker with this University, whose province is Mercia." Sir Isambard Owen, who after a few months succeeded Lloyd

Morgan, the first Vice-Chancellor, had already been the leader of the movement for a Welsh University, and was also Principal at Newcastle, so that his presence gave Bristol a link with these young siblings. Even German Universities offered the loan of MSS. and rare books to Bristol research scholars. The Colston Society turned into the Colston Research Society, and allocated its funds for research and for apparatus.

But a glum period set in, and lasted throughout 1912 and 1913. Since the damage which it did to the University's reputation has long been repaired and—save by the oldest members—forgotten, it would be profitless and distasteful to dig it all up again here. Suffice it to say that the University suffered from the too prodigal award of honorary degrees; the dismissal of several members of staff in circumstances best described as “unfortunate”; the reported strife between Council and Senate; the spate of carping letters in the national newspapers; and the questions asked in Parliament. The principal letter-writer wrote in a manner which varied from theatrical—with copious inversions, capital letters, and classical allusions—to hysterical. The sudden bestowal of £170,000 by the Wills family prodigiously changed the tone of the press, the Great War effaced this petty discontent, and expansion thereafter created the University anew.

The *Gazette* of the early days shows how the students agonized over their perennial problems:— Is the lecture any use as a means of instruction, or must the seminar take its place? Are there too many girls, and too many “little dances”? Can we have somewhere to eat on the premises?—after all, Wolsey began Christ Church with the dining-hall. Can the mind be kept clear through five lectures between 9 and 3? Will non-wearing of gowns lead to proctors and other forms of coercion? A Guild of Undergraduates was mentioned in the Charter, and was soon formed, though it changed its name later. An Officers' Training Corps, long proposed, came in with the Charter, and held regular parades and camps. Sports clubs rapidly increased in number—lacrosse, tennis, swimming, rowing, gymnastics, walking (on one occasion, as far as

Leigh Woods!). The University Settlement in Barton Hill began its social work in 1912. There was a Church of England Guild by 1913, and the first of the University Cathedral services had been held on 7th December 1909.

Among the formal activities of the University, a deputation presented the new King with their loyal and dutiful address on 22nd June 1910, led by Lewis Fry. The first congregation, on 20th October of the same year, contains one item of abiding interest, the M.Sc. degree of A. M. Tyndall, the Nestor and "good old chronicle" of the University (Free Student, 1898). At Haldane's installation as Chancellor in 1912, the seventy trouble-making honorary degrees included doctorates for Henry Newbolt, "Q", Augustine Birrell, and Balfour, the Prime Minister.

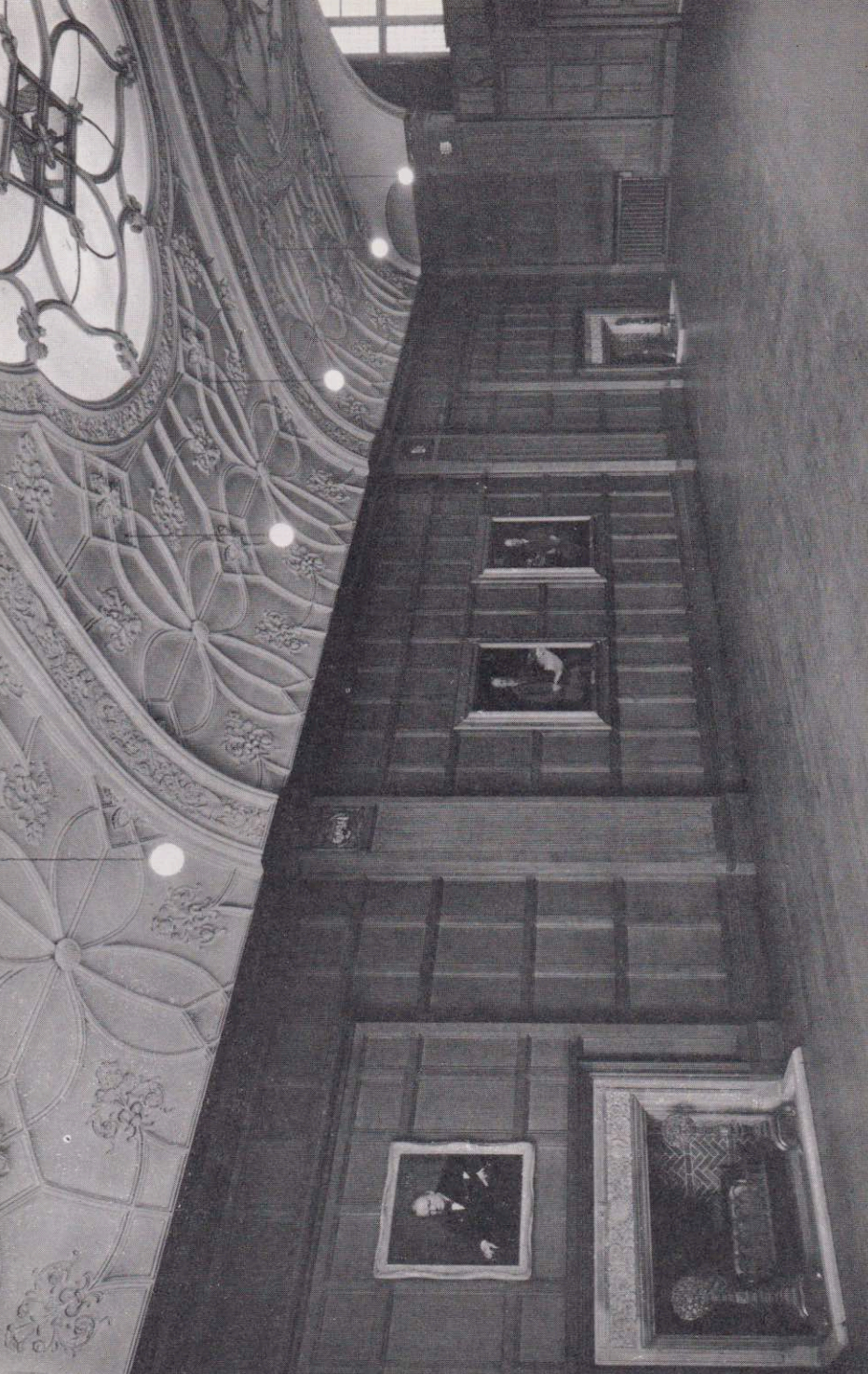
In 1909, the lovely 18th-century Clifton Hill House was opened as a Hall of Residence for women, and later overflowed into nearby houses. Edgcumbe House and Thornton House were purchased as women's halls in 1914, but ceased to function at the end of the first war. But the greatest change in the visible University was initiated on 5th February 1913, when G. A. Wills and H. H. Wills offered £150,000, in memory of their father, for the erection of new main buildings along the south of the triangle; Melville Wills offered £20,000 towards endowment, and the University began to occupy the conspicuous site covered by the Blind Asylum. Foundations were laid, and work started, but the war put a stop to the project, which was not completed until 1925, after a further gift from the brothers to cover increased costs. However, progress was made in other directions during the war: the Hiatt Baker Botanical Gardens in Woodland Road were started in 1916, and the 18th-century Royal Fort House was acquired in 1917, giving the University its first hold on the Fort precinct.

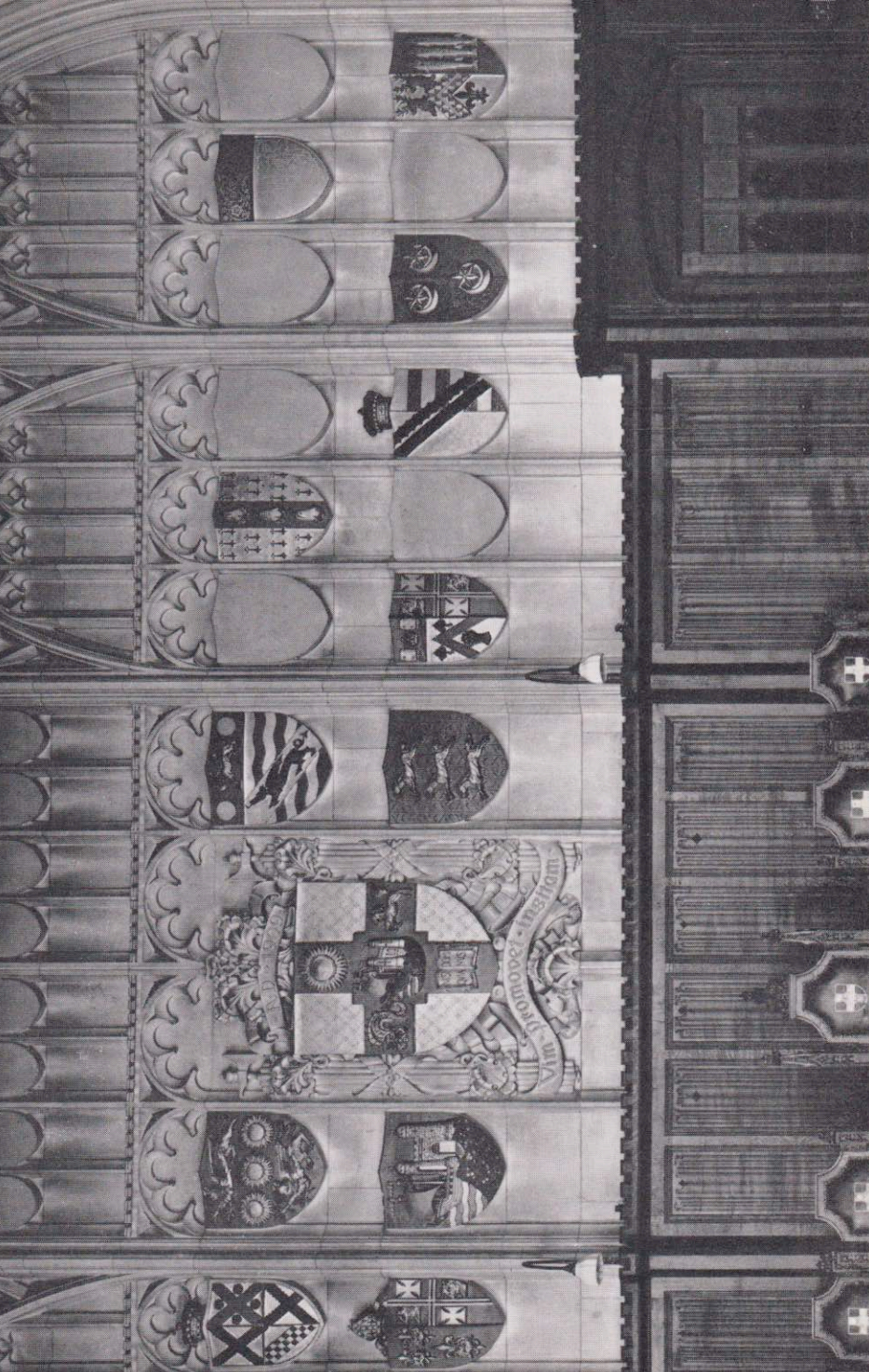
In 1920, Sir G. A. Wills purchased the Victoria Rooms and presented it as a students' club, the Guild became a Union, and the academic staff were prudently given a part in the financial control. In the 1920s, the University really began its march upwards; the advent of a new and energetic

Vice-Chancellor, Thomas Loveday, made a substantial improvement. The Main Buildings (1925), Physics Laboratory (1927), Wills Hall of Residence for men (1929), Manor Hall for women (1932), were all designs by Sir George Oatley in the period between wars. The 1910 block had been his, and his Biology building, a modified version of the old group, was up by 1939. But these, and the post-1945 developments, belong rather to a present-day itinerary than to a history.

The undergraduate population has doubled since before the war. There are at present nearly 2,400 students (including 700 women) registered for a first degree or diploma: about 800 in Arts (including Commerce and Social Study), where women just outnumber men; 500 in Science; 350 in Medicine, 100 in Dental Surgery, and 50 in Veterinary Science; over 200 in Engineering; about 75 in Law. 150 (including graduates of other universities) are reading for the Certificate in Education. As for full-time and part-time postgraduate research, Science has a big lead, with 155 full-time research students out of a total of 259; the number in Arts will increase with improved library facilities and research grants. With this increase of students has gone an even more striking rise in income—£161,000 in 1938-9, £541,000 in 1948-9; much of this is an increased Treasury grant, which has jumped from 41% to 62% of the total income, and which shows national recognition of the great services of the University. The wide "sphere of influence" of the University is shown in its system of School Certificate Examinations. Bristol and Durham are the only provincial universities in England to have their own systems. Centres for Bristol examinations may be established in the city, and in the South-Western counties, and elsewhere, if Senate gives its approval—there were recently two candidates from the Isle of Man.

The visible structure contains some of the noblest university buildings in Britain, which have transformed the top of Bristol and are a lasting memorial not only to the founders





but to the inventiveness of Sir George Oatley. The whole University is in four major sites and a number of scattered units, but the teaching is conveniently concentrated; the chief groups are in the triangle mentioned before, the nearby Royal Fort, Clifton Hill (with two women's halls), and the Wills Hall precinct (which will one day contain other men's halls). Eventually, much of the hill below Royal Fort will be occupied by the Engineering and Medical Schools. It will be well to start an itinerary at the great belfry which is now the focal point of the University and, to some extent, of the city (pl. 7).

The 215-foot tower stands powerfully at the top of Park Street; sturdy yet aspiring, its Bath and Clipsham stone knits together the various levels and colours and styles of the buildings clambering round it, and even subdues the carved ladies on the roof of the Art Gallery. Critics of its proportions have thought it stumpy, but the great upborne octagon at the crown is graceful from any viewpoint, and the lower stories, though perhaps lacking in height, are of enormous girth, with a first roof at 72 feet that must be one of the loftiest tower ceilings in England. Critics of the revival of Gothic building have been more truculent, and largely unthinking; the style chosen was Perpendicular, and this, they say, damns it all as "pseudo." But what were the alternatives? Georgian and Regency Clifton might have been copied, but no building of this type, with its well-mannered roof-lines and uniform windows, could have made the most of the cramped island site; a white and soulless concrete box, relieved by meaningless motifs out of no tradition, would have been an insult to a city of noble buildings stretching from Redcliffe to Royal York Crescent; in fact, this respectful imitation of past splendours was the one style which would rise up and utilize the space, adorn the hill-side, be spacious and light (with windows of different sizes) and comfortable, and remind the beholder of the majesty of learning. Further, it is probable that the Perpendicular style was first developed in nearby Gloucester; and—as for the propriety of erecting towers—no county in

12. *Council Chamber : Benefactors' Shields.* Left to right, top row, Haldane, Wills, Merchant Venturers, Abbot, Worsley; bottom row, Percival (as Bishop of Hereford), Bristol, Fry, Percival (as Headmaster of Clifton), Leverhulme, Hobhouse, Baker

England has such a group as Somerset, the originator of the spireless tower in the later Middle Ages. The Perpendicular style was evolved over the centuries, to fulfil the medieval ideal of a wall of glass with a roof of stone; to have perfected it, and to imitate it, are both signs of sure judgment. The Tower is the handsomest of the buildings, and the most "correct," but it is still a modern interpretation. From it floats hourly over a grateful city the warm and pure E flat of Great George's ten tons—the fourth biggest bell in Britain, and the deepest.

The main entrance to the University is under the Tower, and is a striking introduction to the whole (pls. 8 and 9); in front, three lofty arches cover a central walk leading to the administrative ground floor, and two cascades of wide stairs flank it and lead up to the higher floors and through to the older buildings further up the hill. The row of lozenge-motifs so prominently set on the first landing were afterwards declared by the architect to be his heraldic tribute to the women who had done so much for the University. The roof of this entrance hall consists of three bays of white fan-vaulting, one of the grandest extant designs in this purely English idiom.

All the more sumptuous interiors are on the first floor: Reception Room, to the left of the entrance; Great Hall, facing it, and preceded by a gracious fan-vaulted vestibule (pl. 10); Council Chamber, Committee Rooms, Vice-Chancellor's Room, and Library, to the right. The Great Hall was, before an air-raid in 1940, a vast and stately place of medieval aspect, with an organ (soon to be replaced), a notable hammer-beam roof (irreplaceable, but acoustically bad), and linen-fold oak walls (now even the stonework is calcined); now it has a plain, flat roof, but for the rest it is a rough stone box 100 feet long, which loses its bleakness only when some academic ceremony clothes it with the peacock colours of gown and hood. Fortunately, the exterior gargoyles remain, and a very lively crew they are. The Reception Room (pl. 11) nearby is large enough to house most of the





public lectures and concerts; it is a darkly-panelled chamber, sweepingly roofed in plaster, lit by one shapely window on Queen's Road, and with little colour beyond the arms of the University's tributary shires and cities, and growing lines of portraits. The Council Chamber (pl. 12) is a semi-polygon of panelled stone and oak linen-fold, with an adroit stone vault; the room is bright with heraldry—the long wall and the six windows bear the arms of families and bodies which have been benefactors of the University, and it is good to see Bishop Percival twice remembered. The corridor outside leads on to the Library.

All the first and lower floors on the eastern member of the main buildings (subsidiary tower and two arms opening from it at right angles) are devoted to the Library. The most ornate of its rooms is the Main Library (pl. 13), 100 feet long and once adequate as a reading-room; but post-war expansion has crowded it. Below, at ground level, is the Medical Library, and further down, by stairs and lift, are stack rooms with rolling presses, packed together but able to be drawn out into the gangways. The eastern member was completed in 1939—at any rate, as far as a hopeful blank wall; it forms a big ante-library with catalogues, an exhibition-room, more stack and staff rooms, a bindery, and above all the Senior Library (pl. 14), with Classics and Law students admitted to the ground floor. The whole of this new range is architecturally significant, for, while following the 1925 group in proportions and colour, and really in spirit, it abandons the Gothic detail—the arch yields to the lintel, and the windows have flat heads.

There has been great expansion of library facilities: until 1923 there was no full-time paid Librarian! The grant in the earliest years of the century was a couple of hundred pounds—in 1949 expenditure on books was £8,000; the stock stands at over 167,000, together with 39,000 pamphlets and 3,300 sets of periodicals. There has been no policy of centralizing all books in the main library; the science departments maintain their own collections (which are administratively under the

University Librarian), and, while the bulk of Arts and Medical books are in the same premises, several departments like Music and Education keep all or part of their libraries for convenient use in their own quarters. The Library is playing its part as an active centre of cultural life, by filling its exhibition room with displays to illustrate current public lectures or special courses, and by assembling on its notice-board a calendar of all lectures, concerts, plays, etc., available in the city and the University. Its treasures, and its windfalls, have come to it methodically. After 1923, the first Librarian added special collections of first editions of early English novels; the great ornithological collection of Dr. Joseph Wigglesworth was bequeathed, along with endowments.

To return to the main fabric of the 1925 buildings: stairs on the east, and stairs and lift on the west, take one up to the second floor, which is devoted mainly to private rooms for the academic staff of the Arts faculty and partly to small lecture rooms. The third floor contains larger lecture-rooms, and these go on up into the fourth and fifth floors (pl. 15), while the Tower contains further stories of most romantic aspect. Also at third floor level, the "New Wing" over the 1939 library gave much-needed accommodation for the Arts staff (pl. 16). All these rooms were intended primarily to be functional and not decorative, but most of them have both virtues; it must be admitted that those which are aesthetically most satisfying (the Tower rooms) are acoustically the worst! —but there is, throughout, a lack of murk, grime, green baize, ropes swooping from remote ceilings, odd furniture, and flat ugliness, all of which are so often associated with universities in general and Gothic ones in particular. This is all the more commendable when one realizes how the block suffered from fire in the air-raids; apart from the Great Hall and the adjacent rooms and corridors, a German room was badly damaged, and the subsidiary tower was burnt out. For a faculty which bases its teaching on a vigorous and elaborate system of individual tutorial work, the shortage and sharing of private rooms remains a problem, and one can only





regret that calmer days allotted to *one* room a floor space which could have served two.

Within these 1925 buildings is conducted the bulk of the teaching and research of the Arts faculty. But Psychology and Economics are in partial exile, Music and Education are neighbours at Royal Fort House, Mathematics (in which an Arts degree may be taken) lives with Physics in the Fort, Agricultural Economics has a section at Newton Abbot, Geography (considered as an Arts subject) admits that it is really a Science by living in the Old Buildings, and most of the theological instruction is given in the five associated colleges. Apart from the Bachelor of Arts degrees in Commerce and Theology, the B.A. is divided into two main types, the Special and the General. In the former, the student concentrates on one subject for his three-year course, though he is directed to study other related subjects in his first year, and sometimes one in his second; honours are awarded—first class, two divisions of second, but no third—, or a “pass” without honours, while a “fail” is quite feasible. Not all the Arts departments conduct a Special school: specialist work in Music is quite exceptional, being entirely postgraduate; but Philosophy, for Special degrees, always groups itself with one of four subjects, to form a Joint School, and Drama has recently been admitted to specialist studies on the same Joint School footing.

The General Degree is based on a different principle. The first year is devoted to four subjects; one must be Greek or Latin, and another must be Philosophy, Music, Economics, Pure Mathematics, or Geography. The second and third years limit the range to three subjects, and the final honours examinations award honours (or withhold them) in the same way as the Special examinations. This course is in no way inferior to the Special curriculum, and critics are wisely coming to realize this; true, it leads to less specialization and so to less postgraduate scholarship, but a “first” in a three-subject degree represents a high standard of achievement and of culture. The grammar schools prize such a

degree among their masters, and it will often be the reasonable choice of a maturer student who can no longer assimilate the minutiae of, say, linguistic study, but whose knowledge is wide and varied. In Arts, as in other faculties, the University also awards the higher research degrees of Master and Doctor.

The Departments of Greek and Latin exhibit, in part, the same phenomena as in other universities: numbers of specialists static or dwindling, but a growing realization of how necessary the Classics are for wider studies, and how much he has missed who has no Greek. True, these subjects are forcibly protected, in that one of them is essential for the General degree, but the specialists tend to be a thin red line of enthusiasts. In addition to the old chair of Classics, Henry Overton Wills endowed a chair of Greek in 1910, and the chair of Classics became one of Latin in 1931; a Readership in Ancient History has recently been established. The University runs reading competitions for Classical pupils of neighbouring schools, and accommodates the local devotees who form the branch of the Classical Association; when the Association came to Bristol for its General Meeting in 1950, Bristol's work for the Classics grew quite sensational—the invariable financial loss was turned to a handsome profit, and the University and the schools were praised for their cooperation. The two departments have some unusual features, especially in their participation in Joint Schools; Philosophy and Classics may be read jointly, and very recently Classics and Drama, and Latin and French, were erected into combined courses which are bound to attract more students to the humanities. Optional sections of the courses include Medieval Latin, Classical Architecture, and Sanskrit.

Modern Languages are represented solely by the Departments of French and German, and there is obviously a need for expansion. The chair of French was established in 1919; it has one of the larger Special schools. The happiest links exist between Bristol and Bordeaux, leading to visits of lecturers, parties of students at the vine harvest, and exhibitions. All the General and Special students must spend a

period of study in France—the latter, six consecutive months including four at the Sorbonne. Likewise, French students teaching in local schools are allotted a tutor within the department, and can attend any classes they wish at the University. The recent production of Racine's *Esther*, with J.-B. Moreau's music, was a triumph of cooperation by the Departments of French, Music, and Drama. The Balzac Centenary in 1950 was celebrated with a series of public lectures. The department arranges reading competitions for local schools, by which individual pupils recite, write essays, and perform scenes from plays. The French Circle is associated with the *Alliance Française*, which frequently provide the lecturers. There is a French choir, which gives concerts from time to time.

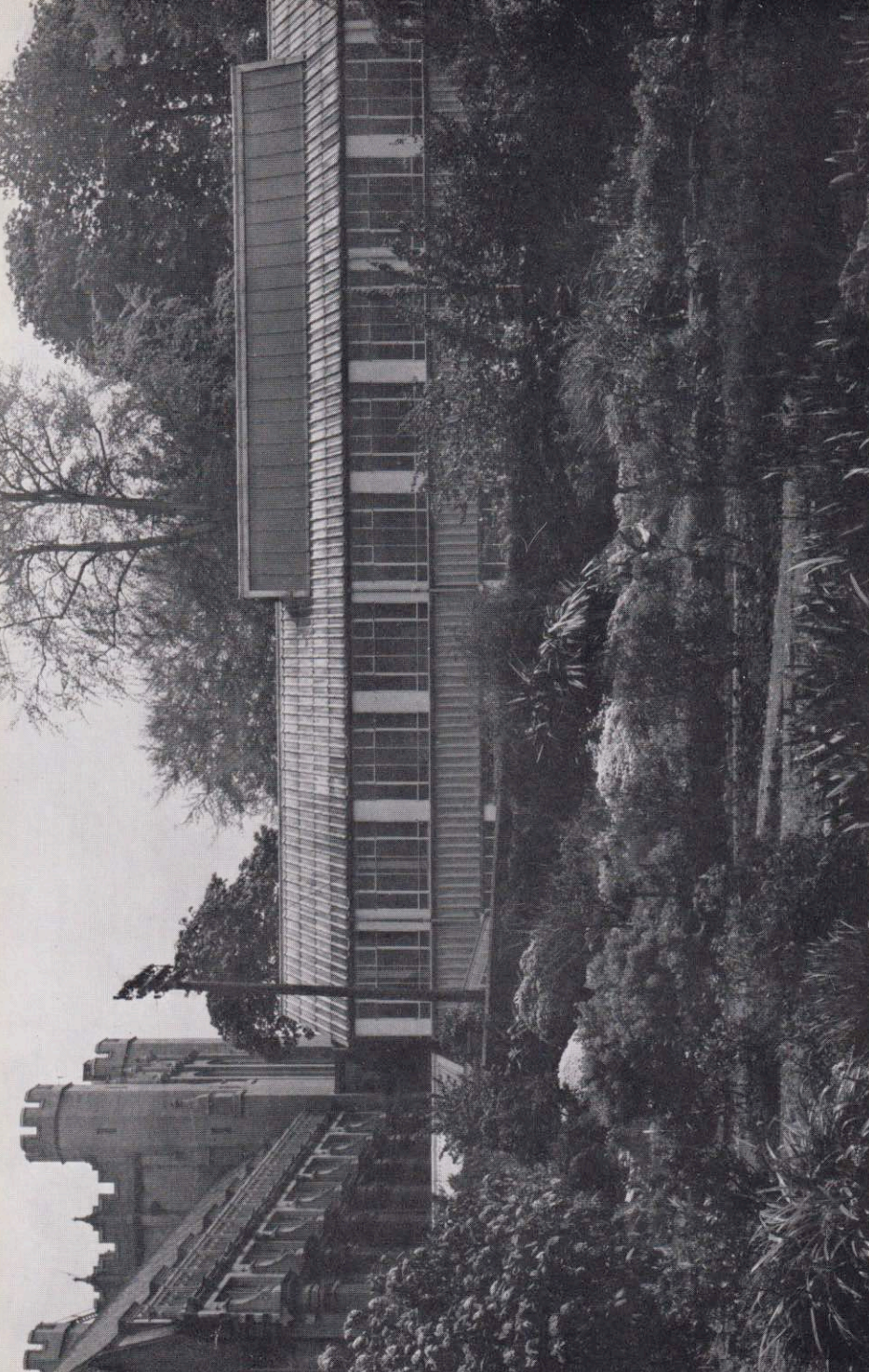
The Chair of German was created in 1948. Here, again, there are strong cultural contacts with Hanover, and thus Special students spend their compulsory summer term abroad at that university, proceeding thence to Göttingen or Hamburg or Heidelberg; they are helped in this by means of a generous loan-scheme. Similarly, students reading German as part of the General degree must spend at least one month abroad. Attractive features of the departmental year have been the annual dramatic performance, the guest-lectures given by eminent literary historians from German-speaking countries, and the long and elaborate commemorations of the Goethe bi-centenary. The German section of the Library offers every chance for valuable postgraduate work; the research of the staff has been concentrated mainly on German lyrical poetry, both medieval and modern, and on the Tristan legend. Here, again, the department invites schools to compete in reading and acting competitions.

The Department of English is officially described as studying the English Language and its Literature; but it so far goes beyond these strict requirements as to offer Old Norse as a subject for a paper in the Final Examination. The medieval side of the school occupies a somewhat smaller part of the curriculum than does the modern; the story of the language and its literature in modern times requires the

larger part because it has within its scope matters that take it back beyond medieval times : the history of European literary theory. In this course, as in many others, the Department obtains the invaluable aid of the Department of Classics ; besides, the School of English reflects with satisfaction that it is not incapable of being of service to the teaching of Classics. There has been a huge expansion since the war ; the number of Special students graduating in 1947 had swollen threefold by the following year, and has since increased, but the careful tutorial system has been kept going. The Special schools of English (Medieval and Modern), and of English (Modern) and Philosophy jointly, attract students of different types ; and graduates with high honours, in the Joint School especially, have been proceeding to Oxford to undertake research for the B.Litt. and other degrees. The department runs several weekly classes for foreign students, and its members assist in literary courses for these visitors at the local British Council centre. Public lectures, or courses, are given for appropriate centenaries like that of Wordsworth in 1950.

Bristol, with all its wealth of historical monuments and associations, provides a noble home for the Department of History. There are two chairs—History and Imperial History, the latter created in 1943. The department attaches great importance to individual tuition and to the study of original authorities in seminars. In recent years the medieval side has been strengthened in order to maintain a well-balanced curriculum. It is possible to study American History in some detail; during this session an American scholar has been a temporary member of the staff. It is very appropriate that the study of Imperial History should receive special attention in this “ Gateway of Empire.” A number of students enter the Colonial Service, and care is taken to keep them informed of the problems of the Empire today. A very successful symposium on Principles and Methods of Colonial Administration, supported by the Colston Research Society, was recently held in the University. Contributions have been made by members of the department





to the history of Early Normandy and of Anglo-Norman England, of Bristol and of the British Empire. Work is proceeding on these subjects, on several aspects of later medieval English History, on the history of education in Wiltshire, the history of the Far East in the 19th and 20th centuries, and on editions of documents for the Bristol Record Society. There is a small but flourishing group of postgraduate students.

Philosophy and Psychology are parting company in 1951, when the latter resumes its old independence; until 1920 there was a chair of Psychology and Ethics, which was abandoned in favour of a new chair of Philosophy. Thereafter Psychology was taught by the Philosophy teachers as a subject within the department, but since the war it has had its special staff. The Philosophy department has nearly doubled its size, and an increasing number of young minds are thus being taught to think philosophically, whether they are reading the subject as part of the General degree, or as a one-year subsidiary to their main subject, or as a feature of their Science course (since this is permitted), or in one of the four Joint Schools in which specialist Philosophy solely has its existence. In this influential subject, emphasis is laid on its relations with other studies—indeed, their partial dependence on it; and the four Joint Schools (with Psychology, English Literature, Economics, and Classics) express this attitude. The published work of members of the department has been noted mainly for its contributions to the History of Philosophy.

The great splendour of the Economics Department shines round its beginning; the first (and, until 1951, only) Professor of *Political* Economy was Alfred Marshall, for a quarter of a century the Grand Old Man of British economists. A chair of Economics was created in 1936. Arts students can read Economics either as a General or as a Special subject; but in addition there is a degree of B.A. (Commerce), which includes subjects like Accountancy and Commercial Law, while dispensing with the Classical qualification as a means

of entry. Here, therefore, have come a large number of students (mostly men), lacking Latin, but with the mental equipment for various careers—industry or commerce, occasionally journalism, or even teaching. Senior members of the Economics Department have given service on Trade Boards and Wages Councils, in conducting social and economic surveys, and in the economic life of Bristol.

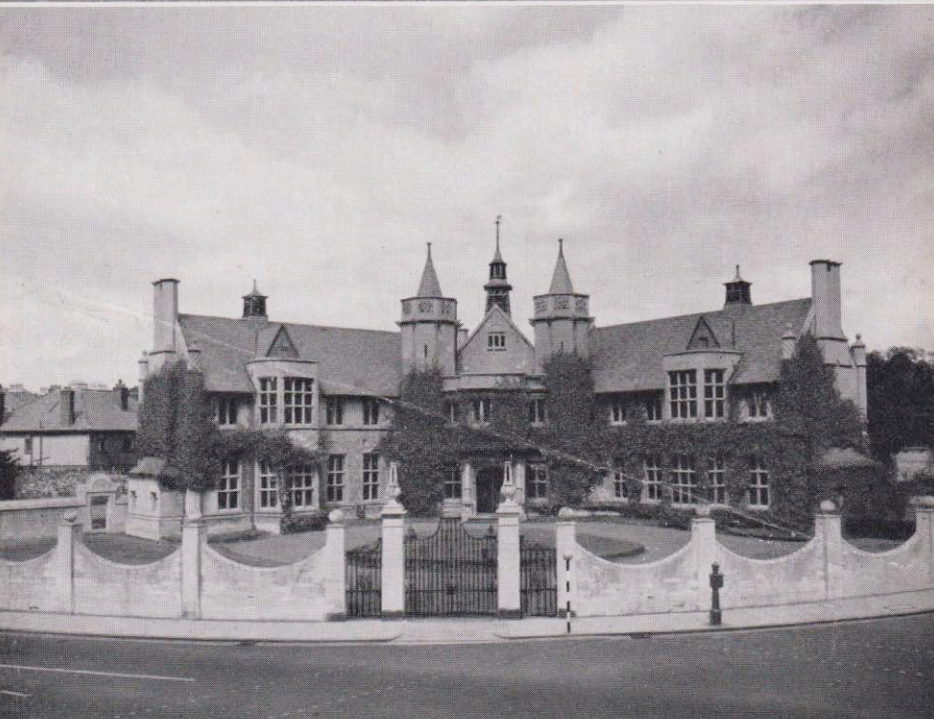
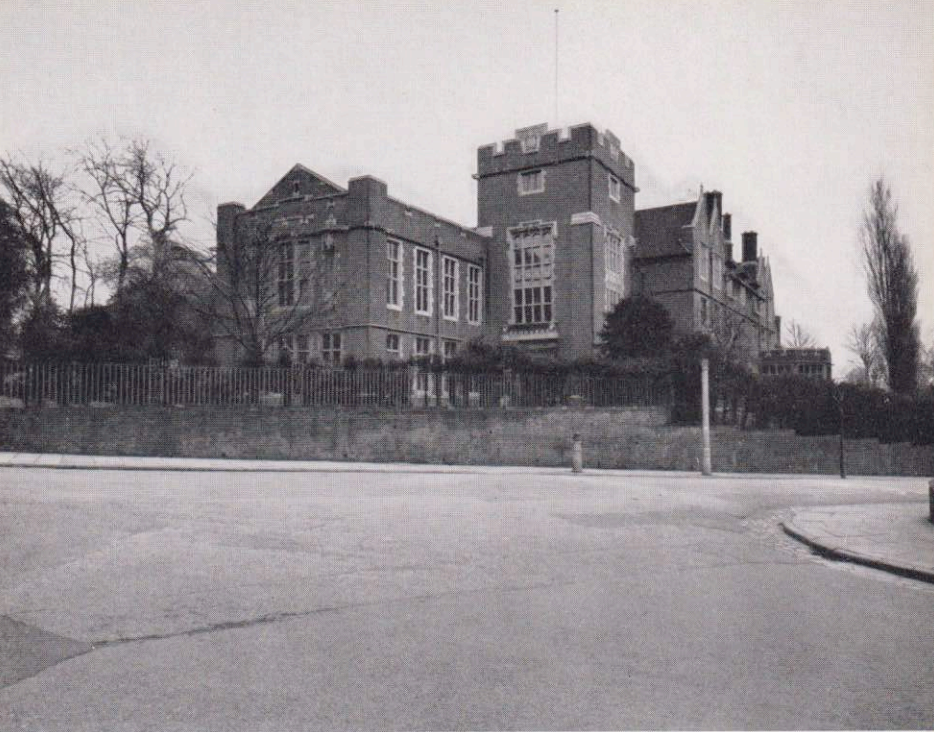
The department also conducts much non-degree work. It awards a Testamur in Social Study, for which it gives a two-year full-time training, both theoretical and practical, suitable for different kinds of social work. This course is in great demand; and women, especially, are training for such posts as club leader, almoner, probation officer, or moral welfare worker. Though not leading to a degree, the studies are difficult enough to ensure a high standard of entrant; on the practical side, students are enabled to observe social organizations—clubs, clinics, employment exchanges, factories, housing estates, municipal institutions, etc.—, to meet professional workers, and to get first-hand experience. Professional organizations of social workers are demanding psychological insight and mature judgment—qualities that can hardly be expected in the young; so the average age of a Testamur class is fairly high, and students have often had much relevant experience. The Economics Department is also responsible for a Diploma in Public Administration (D.P.A.), a part-time (two terms each year) course extending over two years. Students for this course have been chiefly local government officials; in connection with it, lectures are given not only in Bristol, but also in Gloucester and Taunton. Another ramification of the Economics Department is the former Reconstruction Research group, for which funds were raised locally during the war; it has now ceased to exist as a separate organization, but, as the research staff of the department, its members continue investigations in such fields as rural social organization, the problems of the labour market, and the industry and retail trade of Bristol.

The work of the Agricultural Economics section has steadily expanded until it is practically a department in itself, with a section at 79 Woodland Road, Bristol, and another in Newton Abbot. It is closely linked with the Ministry of Agriculture and Fisheries. Work in agricultural costings began at Bristol in 1924, when it was allotted as its province the five counties of Gloucester, Somerset, Wilts, Hereford, and Worcester; Dorset, Devon, Cornwall, and the Scillies were added in 1945, bringing the area of agricultural land up to five million acres, and the number of farms to 72,000. The science is still young (the first research institute started at Oxford in 1913), but it has rendered to the Ministries of Food and of Agriculture, during and between two wars, valuable assistance in the fixing and control of prices of agricultural commodities. The counties added in 1945 are served by the section at Newton Abbot, Devon, which was formerly associated with the nearby Seale-Hayne Agricultural College.

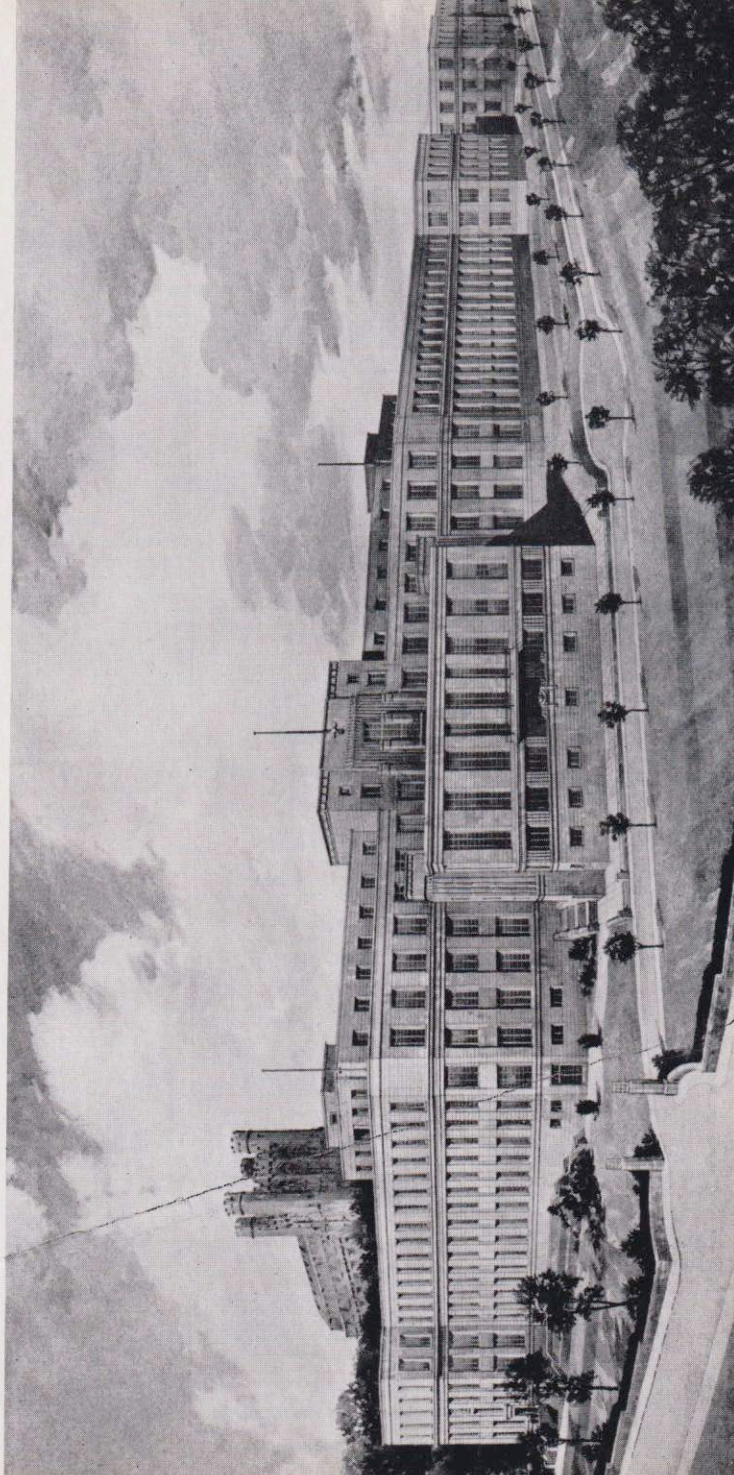
The only other Arts department housed within the main building is Drama; it is the only Drama department in a British university, and many have questioned the propriety of its very existence. But its four years' life has justified the principles on which it was founded: that the study must be not merely of dramatic literature but of the art of the theatre; that it should be conducted in close association with literature in a wider sense; that it must figure among university subjects only for its part in a liberal Arts education, not in order to give a professional qualification for a career in theatre work. Of course, a student who has read three years of Drama has gained some of the interest, the intellectual equipment, and the leadership, needed for practical work, and if he leaves the University with the intention of taking up a career in the theatre, he can make an informed decision on which branch he will enter, or whether broadcasting or television or dramatic criticism or films attract him more. Hitherto, Drama has been read as one of the subjects in a General degree; now there are also

three Joint Schools—of Classics or French or German, together with Drama, where more specialization becomes possible. There are already four research students reading for higher degrees. The department benefits from the proximity of Britain's oldest theatre, and from cooperation with the Bristol Old Vic School; and this group should make the city one of the most important centres of dramatic endeavour. In February 1951 a disused squash court behind the Great Hall, astonishingly transformed, was opened as a studio theatre (pl. 17). The auditorium is reduced to a minimum, but the stage is in some ways luxuriously equipped; in so high a room, an elaborate flying system was possible, and the lighting, and the intended dressing-rooms, television equipment, and film projector, will answer the requirements of modern dramatic media. Above all, the stage is twelve collapsible rostrums, and all can be swiftly transformed from a modern proscenium into an arena or an Elizabethan theatre; this last illusion will be complete when the stage and auditorium galleries are carried round the other two sides of the apron stage. This studio, with its green walls and clean lines, is a trans-Atlantic gift; the Rockefeller Foundation gave the University \$20,000, of which \$12,000 would be spent on the equipment, while the University bore the cost of structural repairs. In this same year, the department has enjoyed one of the annual grants of the Colston Research Society, whose fourth symposium was on the Responsibility of Universities to the Theatre. Papers were read, and various viewpoints presented, by a distinguished group of experts from Britain, U.S.A., France, Sweden, Italy, and Germany, and members resided for four days at Manor Hall.

Apart from Arts, the small Faculty of Law also dwells in the main building, with its library in the 1939 Library wing. In the early days of the College a start was made with legal studies, and eighteen Articled Clerks were prepared to attend lectures in 1878, but by 1887 lack of support suspended the work. International Law became the subject of a course in 1895, and by 1904 the College, along with various local Law



22. *Engineering School (begun in 1950)*



Societies, set up a Board of Legal Studies. In 1923 a Department of Law was established. Two Professors (of Law, and of Jurisprudence and Legal History) and five Lecturers now provide courses for the degree of LL.B., and courses in the Arts faculty, more especially for the degree of B.A. (Com.). Articled Clerks taking the first-year course for the LL.B. degree, and passing the Intermediate degree Examination before entering articles, are required to be articled for only four years; those taking the LL.B. before entering articles need be articled for only three years, and are exempted from the legal portion of the Law Society's intermediate Examination.

The Old Buildings of the University are reached from the 1925 block either by steps and alleys behind the Great Hall, or by means of University Road. They are good of their Victorian type, and modest rather than aggressive. Although they are mock-Gothic, with all its concomitants of tower and turret and pinnacle and arch, they can still satisfy the exacting demands of highly-skilled scientific and technical work. Far from being abodes of medieval gloom, they are, for the most part, amazingly light and clean, the Tudor windows seeming not at all incongruous in up-to-date laboratories; over-crowding, and not bogus Perpendicular, is the chief worry of the departments. The prevailing hue is the red-purple of Hanham and other stone, with freestone details. The old group was designed by Hansom, the architect of Clifton College, in a competition; the entries were exhibited to the citizens at the Fine Arts Academy. Fortunately, the whole "Grand Front" was never carried out. The 1910 block, an early work of Sir George Oatley, with good equipment and large windows, towers up rather grimly, with battlements, shallow buttresses, and a few flattened arches; the roof-levels, enlivened by "pavilions," destroy any illusion. The best of the buildings, because the plainest, is Oatley's 1939 wing at the apex (pl. 5); while retaining the warm colour, it nearly rejects the Gothic idiom.

Undergraduates in the Science Faculty may read for four kinds of B.Sc. degree: with Honours; in General Science; "Ordinary"; and in Domestic Science. The honours degree may be awarded in one of the following schools (though, in addition, one principal subject, or two subsidiaries, must be studied to the standard of the Ordinary degree, during the first two years of the final part of the course): Mathematics, Physics, Chemistry, Biological Chemistry, Geology, Geography, Botany, Zoology, Anatomy, Physiology. A B.Sc. in General Science may be awarded at Honours or Pass level, and consists of either three main subjects (out of a choice of thirteen) or a subsidiary (out of fifteen) and two main, Economics ranking as a subsidiary subject and Philosophy as both; all students for this degree attend a course on The Development of Science, in their third year. The Ordinary B.Sc. course is divided into two parts, Intermediate (one session) and Final (two sessions), and though exemption may be obtained from the Intermediate, three years' residence at the University is needed before the degree can be taken; the Final part consists of two principal subjects or one principal and two subsidiaries, Philosophy ranking as either. The B.Sc. (Domestic Science) includes two (post-intermediate) years at the University, for Chemistry, Physiology, Botany or Zoology, and Hygiene, and a third year at the Gloucestershire Training College of Domestic Science at Gloucester, where the practical aspects of Domestic Science are taught. There is a postgraduate Diploma in Horticultural Science, and postgraduate courses for Certificates in Pomology, Plant Pathology, and Entomology will begin in 1952. There is also a Testamur in Bacteriology and Microbiology, awarded to Science or Medical graduates after one session's work.

The one department in this enceinte with which the Arts faculty is concerned is Geography, since it may be read as an Arts or a Science subject. It uses the 1892 block, and adjacent quarters, on University Road. (To the south, the Lecture Theatre of the City Museum has to be used for the

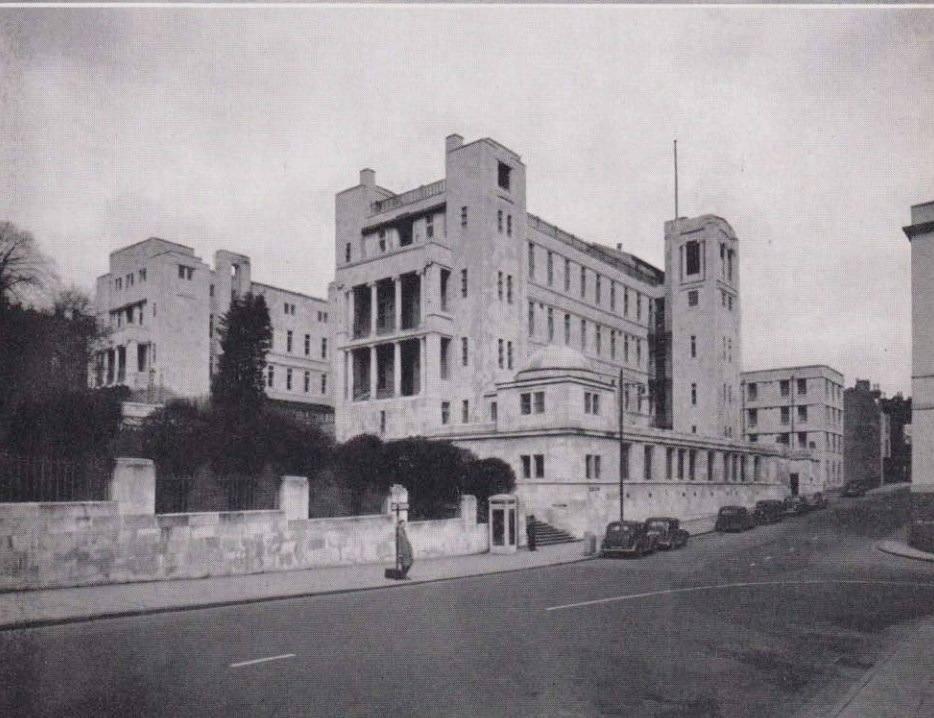
larger departmental lectures). This block suffered from fire, and thus from water as well, in air-raids, but the losses are being replaced. The soaring chamber which was formerly the Senate Room is now a very fine map library and model room (pl. 18); it houses a comprehensive collection of large-scale maps for teaching and research purposes, and affords space for the proper display of topographical models, including a recently-completed photographic skin model of the Bristol area. An important collection of old and rare maps is kept in the Arts Library. In a group of small rooms, including the original University strong room, the department has now an instrument store for the valuable collection of survey instruments, a specially-designed photographic dark room, and a photogrammetry laboratory; this last room contains the latest photogrammetric equipment, including a Williamson-Ross stereoscopic plotting machine for producing precise maps and plans from air photographs.

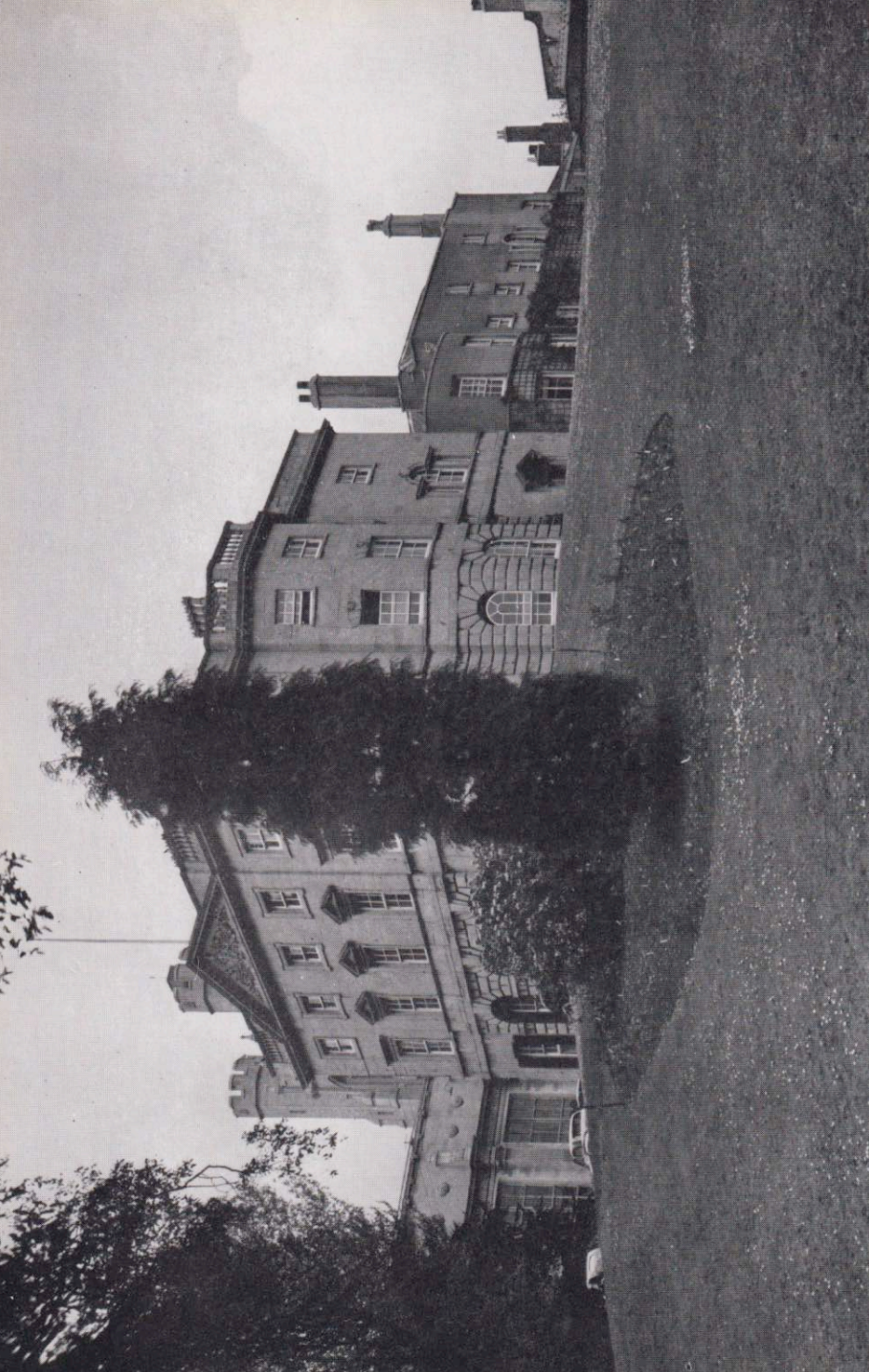
The Departments of Botany and Zoology are in the North Wing and the new Biology Wing which adjoins it. The Melville Wills Chair of Botany was created in 1919, and the Chair of Zoology in 1933, though both departments existed in the College. The new wing, which was in use by 1939, is one of the best equipped in the country. Teaching and research facilities are admirably designed, and have enabled these departments to develop since the war. The library and museum are shared; a complete set of the *Botanical Magazine*, the first number of which appeared in the 18th century, is a valuable possession. In the museum there is a collection of plant fossils from the Somerset coalfields; the herbarium includes the Reader and White Herbaria of British plants, the Armitage Herbarium of mosses, and the Darbshire Herbarium of lichens. The Department of Botany takes a share in the teaching of Microbiology and Biochemistry; there is good equipment for work in Physiology, Biochemistry and Mycology, and the ease of access to various types of vegetation favours the study of Ecology. It is to these subjects that the research work of the department is mainly directed.

There is a suite of experimental dark rooms, in which conditions for plant growth can be controlled. The wing stands on the site of Leipner's 1882 Botanical Garden; the ground for the existing Garden (pl. 19) was acquired by H. H. Wills in 1916, with a view to erecting a new Physics laboratory; when it was found from the deeds that the line of buildings in Woodland Road had to be preserved, the plan was abandoned, and the field became an extension of the old Garden. In 1938 it was laid out anew, with a memorial to Hiatt Baker, a lover of gardens and a good friend of the University, and was named after him; some thousand species of plants are cultivated in it.

The Zoology Department has special provision for animal physiology and biochemistry, as well as the usual facilities for morphology and histology, and a small unit for work with radioactive isotopes. In the present session a new building extension will give additional space for physiological and biochemical work with constant temperature rooms, and a small microchemical laboratory. The post-war increase in research students and in academic and technical staff, together with the exceptional facilities of the new building, have led to a great expansion of work into new fields, while interest is maintained in more traditional teaching and research. Work on fossil vertebrates and on the structure of the nervous system, studies of insect evolution, parasitological investigations into infections of sheep and trout, go on side by side with research on tissue culture and ultramicroscopic structure of teeth and scales, and with the use of radioactive tracers in following the chemical pathways of salts and phosphorus in animal metabolism. Work is also being done on excretion and water regulation of protozoa, on the respiration and vitamin requirements of insects, and on the behaviour of embryonic fish and of young and adult birds. Each summer a party of staff and students go to Lough Ine in S.-W. Ireland; there they spend a month investigating the factors affecting the distribution of marine animals and plants at the entrance of the Lough. Bird behaviour provides an opportunity for

23. Top, *College of Technology (formerly Merchant Venturers' Technical College)*
24. Bottom, *Bristol Royal Infirmary*





work at the Severn Wild Fowl Trust; parasitology of sheep makes use of the Veterinary Field Station.

There has been a Department of Geology since 1876. The first lecturers, E. B. Tawney and W. J. Sollas, combined their duties with the Curatorship of the City Museum. In 1880 Sollas was given a chair of Geology and Zoology, but did not become a full-time member of staff until later; Lloyd Morgan succeeded him, combined the work of Professor and Principal, and in 1901 exchanged his chair for one in Psychology. In 1910 Geology and Zoology were separated; the Geology chair is endowed by a gift from Mr. Channing Wills. For many years the main interests of the department have been in the study of fossils and in the reading of the history of the rocks recorded locally: Carboniferous Limestones, the Coal Measures, and the Jurassic rocks of the Cotswolds. Nowadays such investigations extend over much wider fields, ranging from Devon to Scotland, and for some years members of the staff and students have carried on research in East Greenland under the aegis of the Greenland Commission of the Danish Government. In the last ten years more teaching and research have been devoted to mineralogy and petrology, and there have been developments in the study of Mendip minerals and of radioactive and structural petrology.

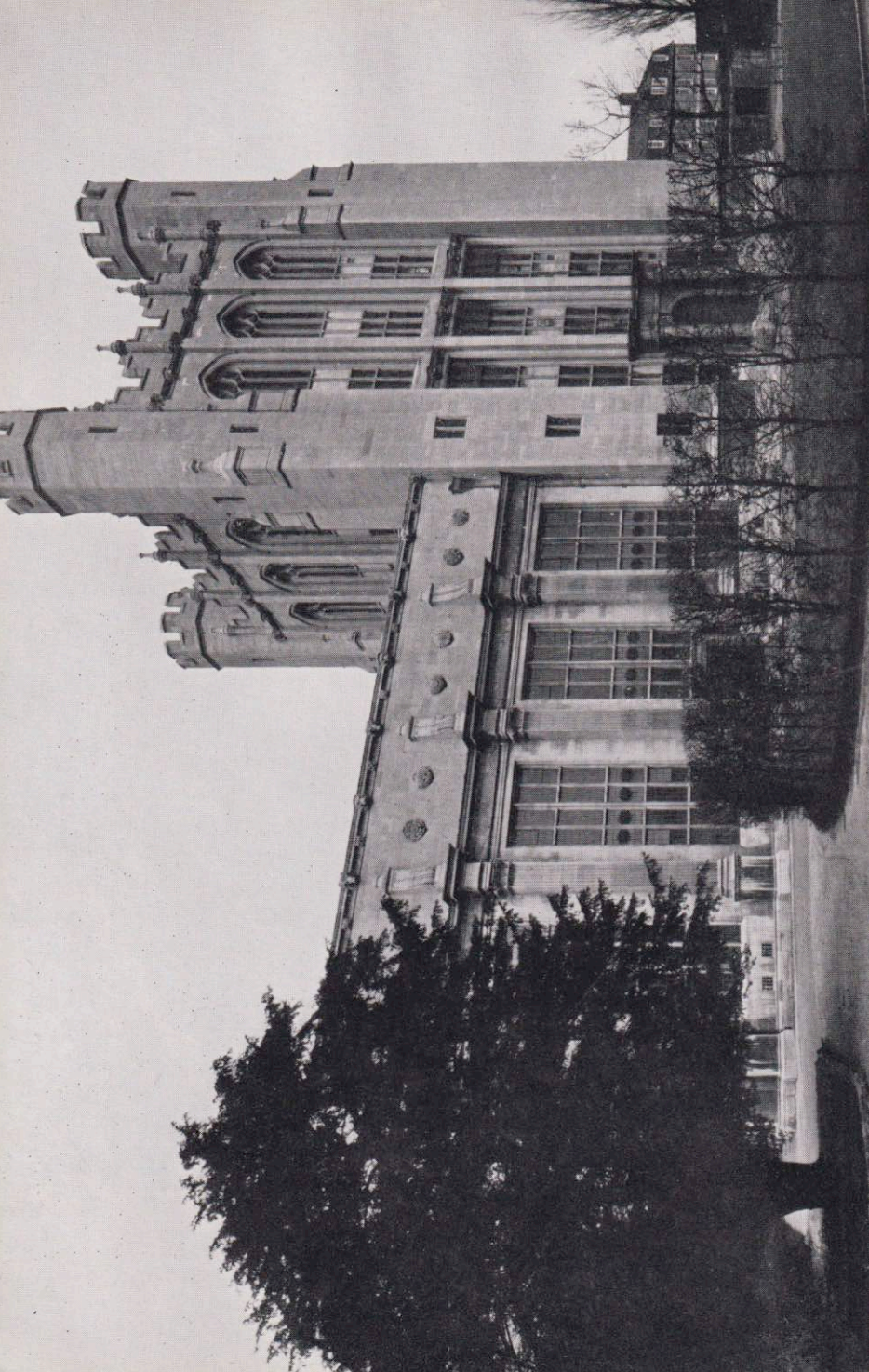
The Department of Chemistry brought distinction to the University from its earliest days. The first six members of staff appointed in 1876 included two chemists. The Professor was authorized to spend £374 on equipping his laboratory, and received a grant of £10 to go to Germany to buy apparatus. His successor, Sir William Ramsay, combined the responsibilities of the Professorship with those of Principal, but created a tradition since maintained by a succession of eminent chemists. The 1910 block gave the department an extensive and well-equipped laboratory; since then, there has been a big expansion of research work and of numbers of students reading Chemistry. There are two Chairs—the Leverhulme, of Inorganic and Physical Chemistry, and the Alfred Capper Pass, of Organic Chemistry;

the name of another benefactor is commemorated in the Worsley Chemical Library. At present, the average annual entry to the Special Honours School of Chemistry is 55; Honours students carry out research in their third year. Nearly all the 50-60 postgraduate students are engaged on original investigations for higher degrees. Present research interests in physical and inorganic chemistry include the study of reactions on the surfaces of solids, problems in chemical analysis including spectroscopy, chemical processes occurring in living matter, and reactions by which plastics are made. In organic chemistry fundamental research includes work on the preparation of new types and forms of carbon compounds, the colouring matters of plants, the chemistry of fats, oils, and sugars, and the preparation of antibacterial agents.

An Honours course in Biological Chemistry has recently been established, and a new building is ready. The course is unique in that, whereas in other universities Biochemistry is the subject of a separate department, in Bristol its study is the result of close cooperation between the Departments of Chemistry, Botany, Zoology, and Physiology. Its aim is to train students in the borderline areas between these four subjects.

Three departments concerned with the pre-clinical teaching of Medical students have their headquarters in the Old Buildings. The Department of Anatomy trains Medical and Dental students; physiotherapy students are taught Anatomy, and special demonstrations and short classes are arranged for St. John's Ambulance personnel and first-aid groups. In the teaching, special emphasis is laid on the anatomy of the living; an X-ray machine enables students to see and study many of the internal organs in their own bodies. The chief research is directed to the application of physical and chemical methods to the study of living tissues and their structure. The department is fortunate in having at its disposal one of the reflecting microscopes invented in the Physics Department. Part of the department's work is the study of





the formation and action of steroid hormones, produced mainly by a small gland, the suprarenal, lying on each side of the body just above the kidney; special attention is being devoted to the relation between these hormones and the blood-forming organs. Investigations are also being carried out on the pathways by which viruses become disseminated throughout the body. During the last war, the department was the worst hit in the University—its 1900 block, with a large dissecting-room on the first floor, was wrecked, and the weakened walls will now stand only a temporary partitioning.

The Department of Physiology shared a new home with Chemistry when the 1910 block was opened, and this remains the chief scene of its activities. Since the war, the department has expanded into the temporary building in Tyndall Avenue, where there is a laboratory for Human Physiology, and into the Veterinary School. The recent increase in the number of Medical and Dental students has placed a strain on the space the department has at its disposal. Recently, the responsibilities of the department have grown; an Honours course in Physiology is now available for a limited number of Medical and Science students. Research work is proceeding in various branches of Physiology and Biochemistry.

The Physiology Department was also responsible for the teaching of Pharmacology until 1942, when a separate Department of Pharmacology was established, with a Readership in 1944 and a Chair in 1949. Medical students, in the pre-clinical and clinical stages, and Veterinary students are taught in the department. It is accommodated partly in the 1910 block and partly on the ground floor of the Tyndall Avenue building, which, despite its temporary nature, contains facilities of which the department is proud. In research, progress has been made in the study of the functions of the posterior pituitary gland, the effects of nutritional deficiencies on metabolism and drug action, and the endocrinology of infancy. The work of the department has aroused interest in

foreign universities, and research assistants from the U.S.A., Greece, and Italy have come to Bristol to share in its work.

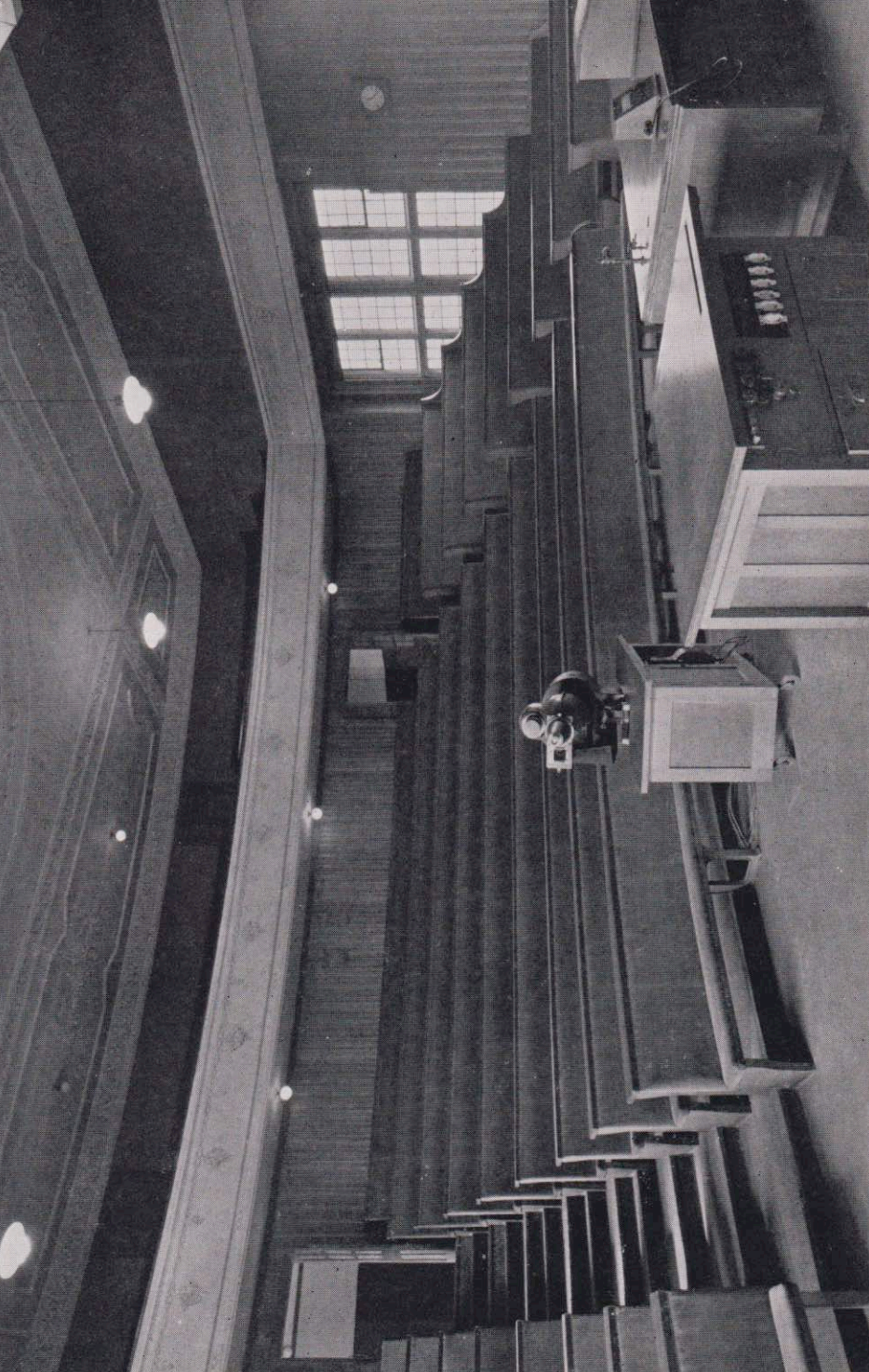
On leaving the Old Buildings and going further up the hill, one sees on the right, in the wedge between Woodland Road and University Walk, the brick-and-freestone Baptist College, in a 20th-century adaptation of Tudor, with a low tower (pl. 20); it stands amid the fringe of the foliage that graces the Royal Fort above. The College was founded in 1679; its chief treasure is its unique collection of Bibles, including the only complete copy of Tyndale's New Testament in the 1st Edition, 1525. This, and four other theological colleges, are associated with the University for the purpose of the B.A. courses for Theological students; the bulk of the instruction takes place in them, though certain subjects are the responsibility of the University, and members of the colleges may read the ordinary B.A. course. The other four are scattered: the Western College (Congregational, 1752) occupies modern and piquant buildings (pl. 21) at the crown of Cotham Hill, opposite the site of Protestant martyrdoms. Didsbury College (Methodist) is far out, beyond Westbury-on-Trym, and derives its name from the Manchester district where it was founded in 1842, being transferred to its present quarters 103 years later; it is still small, but extensions are about to begin. The two remaining institutions train for the Church of England ministry, and are Evangelical in character. The Bible Churchmen's College, founded largely for missionary work, occupies Victorian mansions overlooking the Downs, named appropriately after Marian victims; it has its own chapel. Clifton Theological College (training for the home ministry) is in the interesting 17th-century Stoke House on the other side of the Downs; it has been well adapted, with hall, library, and chapel, and the 36 students have each a study-bedroom and the use of a swimming-pool and tennis-court. Since 1944, Religious Knowledge has been a subject in the General Arts degree, and is designed mainly for those who will teach it in schools.

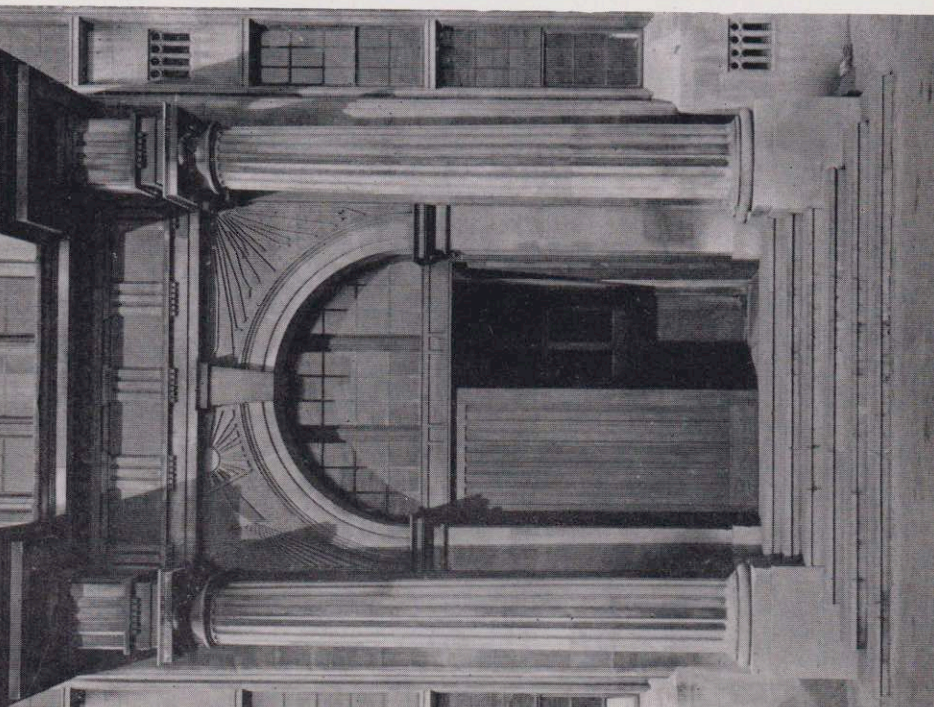
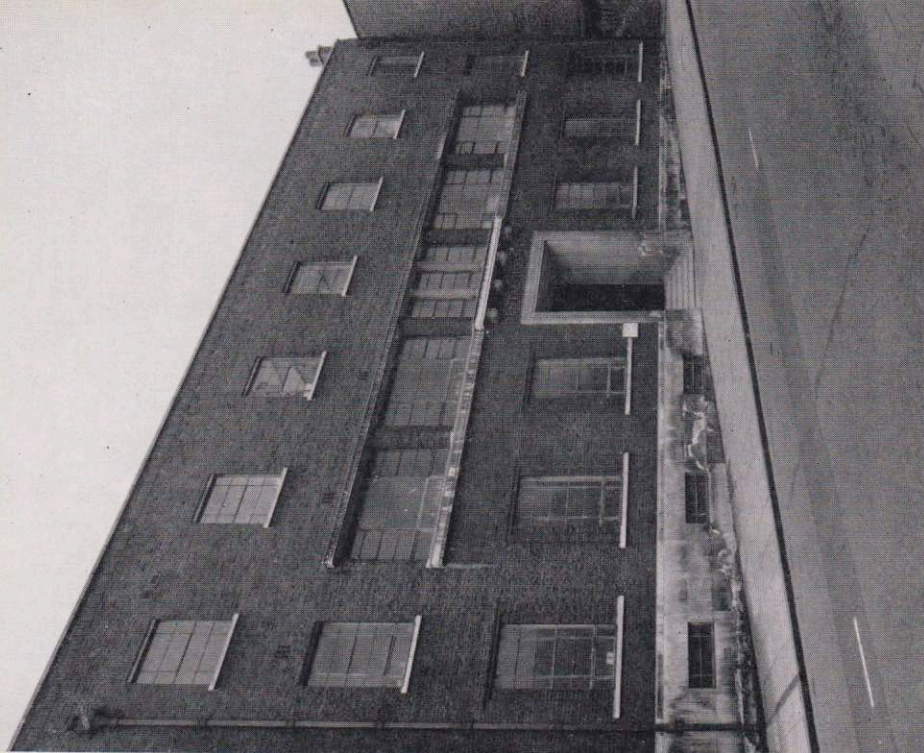
Beyond the Baptist College, on the same level, the new Engineering School is rising. The University College offered courses in Civil, Mechanical, Electrical, and (by arrangement) Mining Engineering; only a small proportion of the students took a degree. The agreement with the Merchant Venturers in 1909 began a period of cooperation, for which the University has many reasons to be grateful. The agreement ended in 1949, when the Merchants handed over responsibility for the Technical College (pl. 23) to the City, which agreed to accommodate the faculty until the new Engineering building is ready. The building in Unity Street has for some years been very cramped. The demand for graduates in Engineering is now greater than ever, and the faculty has grown in size; there is an urgent need for increased laboratory space and for greater research facilities. It is hoped that the first instalment of the new building, comprising some two-thirds of the whole, will be ready in 1953. The complete scheme comprises a central block with two wings, the whole shaped as an arc of a circle to follow the contour of the hill on which the building is placed (pl. 22). The central block is to contain lecture and staff rooms, the library, and laboratories on the ground floor: one wing is to contain engineering laboratories only; the other wing will have an aeronautical laboratory on the ground floor, with accommodation for the Departments of Geology and Mathematics on the first and second floors. The first instalment of the building is to be the central block and one wing. The design of this building owes a great deal to Emeritus Professor Andrew Robertson, who has done much to establish the traditions and reputation of the faculty.

The Faculty of Engineering has five departments. The Department of Civil Engineering has a distinguished record of theoretical and experimental work in structural engineering. Recently it has concentrated its research efforts on buckling problems of steel and light alloy structures; it is also interested in suspension bridge theory. The new building will include better provision for the development of the work

that is being done on hydraulics and soil mechanics. The Department of Mechanical Engineering has been mainly concerned in its researches with strength of materials, and important work has been done in this field. The emphasis at present is on the behaviour of materials in their plastic state and the "fatigue" of materials, when subjected to many repetitions of load. The Department of Electrical Engineering has increased the equipment at its disposal very considerably since the war. The research work of the department is mainly concerned with low-power measurements, electro-technics, and electrical machinery. The Department of Aeronautical Engineering was established in 1945, when the Sir George White Chair of Aeronautical Engineering was endowed by the Bristol Aeroplane Company. At present the department is short of space and has overflowed into an annexe. The main items of equipment are two wind tunnels in which force and pressure measurements can be made; a water tunnel in which high speed (supersonic) air flow can be simulated; and an aircraft wing for structural experiment. Research activities have so far been restricted to small experimental items and to theoretical investigations. The Department of Theoretical Mechanics is one of the youngest in the University. It has been constituted out of a group of mathematicians in the Faculty of Engineering, which has grown in size with the increasing part Mathematics has to play in the education of Engineering students. It deals with the mathematical education of the students of the faculty at all levels and co-operates in the work of postgraduate students. The research work of the department has been mainly in the theories of the elastic and plastic deformation of metals.

Further away, again, from the Baptist College, but on the same general level, the University intends to build a new Medical School between the Engineering School and St. Michael's Hill. It will, however, be several years before work begins. The incorporation of the Bristol Medical School in the University College in 1893 led to the creation of the College Faculty of Medicine, but, for some years to come,





clinical teaching remained largely independent of the University. When the College attained University status in 1909 it acquired the power to grant its own medical degrees, and this helped to knit together the medical teaching of the city. The student who had completed his pre-clinical work could choose between the Royal Infirmary (pl. 24) and the General Hospital for the completion of his course, for each possessed a separate clinical school which was more or less autonomous. In 1922 these schools surrendered their independence and the whole medical curriculum came under University management. The parallel clinical courses, however, continued side by side until 1940, when the Infirmary and the Hospital amalgamated as the Bristol Royal Hospital. Clinical Medicine is studied in the United Bristol Hospitals, which make up the Teaching Hospital Group (Bristol Royal Hospital, University of Bristol Dental Hospital, the Bristol Royal Hospital for Sick Children, the Bristol Maternity Hospital, and the Queen Victoria Jubilee Convalescent Home), and in certain Hospitals, including Southmead, under the control of the South Western Regional Hospital Board.

The Department of Medicine has about 120 "medical" beds at the Infirmary. All branches of medicine are taught, including diseases of the skin and Radiodiagnosis. The main research interests at the moment are the study of acute rheumatism, rheumatic heart disease (to which considerable contributions have been made), and congenital heart disease. This latter work is carried out in collaboration with the Department of Surgery.

The Department of Surgery has its centre in the Infirmary. There are facilities for clinical research and for a limited amount of experimental research. The department has charge of about sixty hospital beds. There are special departments of Neurosurgery, Thoracic Surgery, and Plastic Surgery at Frenchay Hospital and Radiotherapy at the General Hospital. Members of these departments are on the teaching staff of the Department of Surgery, mainly for the purpose of postgraduate instruction. Patients attend these departments

29. Right, *Dental Hospital*
30. Left, *Physics Building : Main Entrance*

from the whole of the South Western Region for special investigation or treatment.

The Department of Obstetrics has its headquarters at Southmead Hospital, where there is a block of beds for maternity cases. At the General Hospital, routine work associated with the diseases of women is undertaken. Antenatal clinics are supervised in many districts of Bristol in co-operation with the Public Health Authorities, and a Midwife Teachers' Certificate course is given. The Department of Child Health was created in 1947 as a result of the increasing interest in the preventive and curative problems of health and disease in infancy and childhood. Its teaching caters for many people in interests allied to Child Health and includes, for instance, a part in the training of Health Visitors and Midwives. The clinical facilities afford wide scope for the diagnosis and treatment of disease. The link with the maternity departments gives opportunities for research in such matters as prematurity, genetically inherited disease, and the appropriate use of modern methods of treatment of infection. There are also Departments of Ophthalmology, of Laryngology, Rhinology and Otology, and of Anaesthetics. The Department of Psychiatry was created in 1945, for undergraduate and postgraduate work. There are special units for electroencephalography, radio-active tracer techniques, biochemical and endocrine research, and experimental psychology at Barrow Gurney and Fishponds Hospitals. Research in mental deficiency and neuropathology is conducted at Stoke Park Colony.

The departments of Pathology, and Preventive Medicine, including Bacteriology, are at Canynge Hall. The Department of Pathology also has the use of research laboratories at the General Hospital. Members of the department are responsible for autopsies at several hospitals, and on all animals which die at Bristol Zoo, and for the routine examination of surgical specimens removed by the professorial unit of surgery at the Royal Infirmary. The research work of the department is mainly in experimental Pathology, Histological studies,

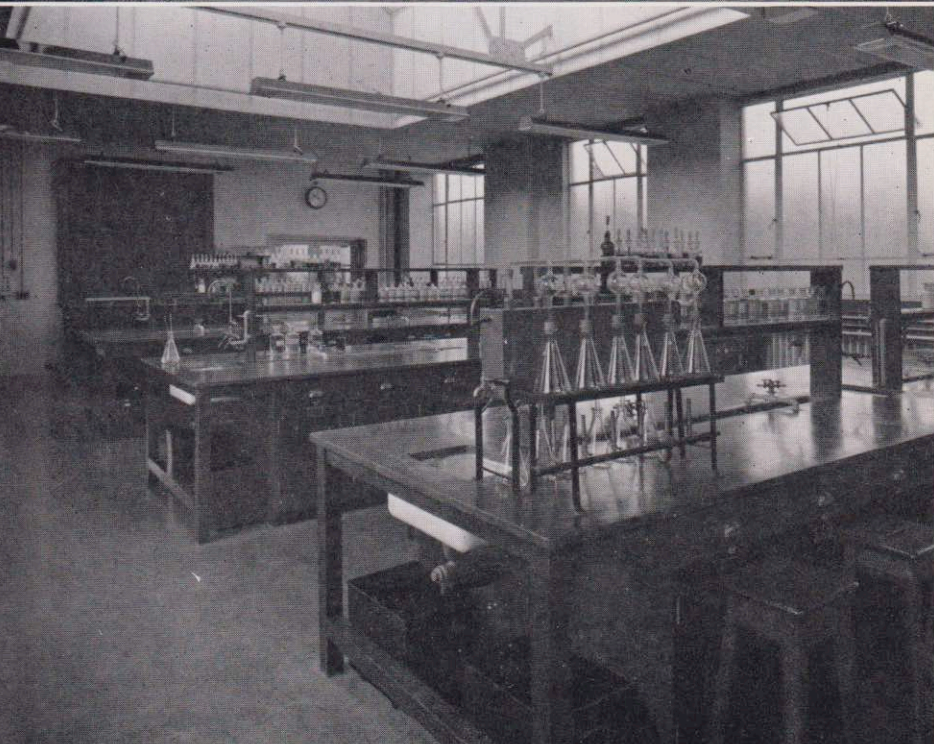
and the problems of malignant disease. There is close liaison with all the hospital pathology laboratories in the district—Clinical Pathological Conferences are held at Canynge Hall each week in term time—and there is a Staff Journal Club of pathologists. The Professor of Preventive Medicine is also Medical Officer of Health of the city and his department, of which the laboratory of the Public Analyst forms a section, works in cooperation with the Public Health Service of the city. Medical students attend courses in Social and Preventive Medicine, and Health Visitors, Sanitary Inspectors, Food and Drug Inspectors, Midwives and Medical Laboratory Assistants also receive instruction. A Professorship of Bacteriology was created in 1951 within the Department of Preventive Medicine. The work of the Bacteriology Laboratory is associated with the Public Health Laboratory Service.

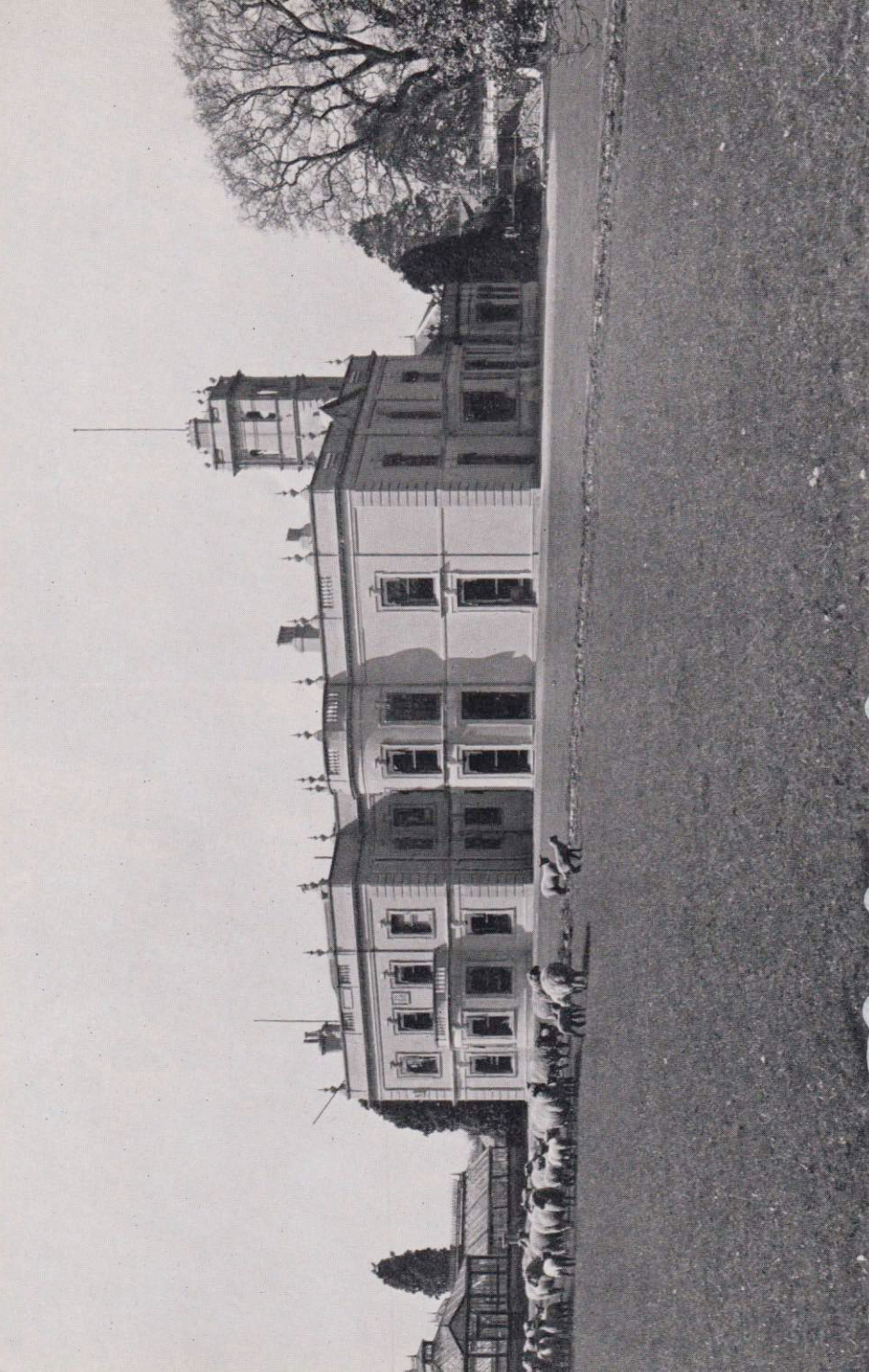
The University may award the following postgraduate diplomas: in Public Health, in Psychological Medicine, in Medical Radiodiagnosis and in Medical Radiotherapy. There is also a Certificate in Public Health. There is a Department of Medical Postgraduate Studies, which, in addition to general supervision of postgraduate work, arranges courses for potential specialists and for students from overseas who wish to study British methods, and occasional refresher courses for General Practitioners. The Medical Library, which has benefited from a long and friendly association with the Bristol Medico-Chirurgical Society, contains a wide range of books and periodicals, many of which are valuable. It has an admirable home on the ground floor of the University Library.

To return to the corner by the Baptist College; further up the hill, Tyndall Avenue is reached, with the Botanical Gardens on the left; on the right are the temporary laboratory for Physiology and Pharmacology (pl. 19) and the entrance to Royal Fort. The drive of the Fort passes a lodge and plunges

through the trees, shrubs, and flowers of the considerable remains of Tyndall's Park, one of the loveliest precincts now in University hands. The site has had a rich history. Originally Windmill Hill, and a spur of the upland now covered by Cotham and Kingsdown, it was fortified by Parliament in 1642, at the outbreak of the Civil War, as part of the semi-circular defences of the city; the various forts were to hold the hills at whose mercy Bristol would otherwise lie, while the Avon must seal the other side. But by the middle of 1643 Prince Rupert had captured Bristol, forts and all, for the King, and made his headquarters in what was now rebuilt and renamed Fort Royal; from here, two years later, he rode out in capitulation, dressed in scarlet and silver, and mounted on a black charger, and in 1655 the Fort shared in the Cromwellian destruction of Bristol Castle. Though one of its five sides was 300 feet long, little now remains save for the small, shabby gatehouse leading on to St. Michael's Hill. The subsequent life of the Fort has been happier; in 1760 a member of the prosperous Gloucestershire family of Tyndall (which included William Tyndale, translator of the Bible and martyr) built the present Royal Fort House, with a park stretching far up Whiteladies Road. The park has been gradually pared away—Victorian mansions stand on most of it, and the University and Grammar School have engulfed its southern fringe, but what is left is very beautiful. Even this residue is lucky to have survived; in 1792 a speculative building-scheme had already bought up the park and dug foundation-trenches for huge terraces; but the war and panic sent the firm bankrupt, and the family regained the ground in 1798. The eminent landscape gardener, Humphrey Repton, was called in to repair the scars, and he made all more beautiful than it had been before; trees screened the park from aggressive new terraces nearby, the present lawns and winding footpaths began their artless occurrence, and the loiterer was checked by several hahas across the domain. The diversity of the gardens, their broken vistas, and their varied contours, make them seem much larger than they are, and in spring and high

31. Top, *Veterinary School : Courtyard*32. Bottom, *Veterinary School : Biochemical Laboratory*





summer they cast a light-hearted air over the serious work around them.

Two great buildings stand on the site—the old House, and the 1927 building, which straddles between two of the former bastions. The House (pl. 25), and its humbler neighbour Stuart House to the east, form one of the best Georgian groups in Bristol. The architect was James Bridges, whose preliminary wooden model stands inside. The three visible façades are of variant designs; inside, the house is noted especially for Paty's ceilings and friezes in carved wood and plaster (pl. 26). And the civilized study of Music goes on within. Music, of course, had been made at the University long before the chair was established in 1946. Activity was centred on the Education Department, since it had a musical specialist; there were madrigal groups and choirs, but sea-shanties and the like figured in the annual concert at the Colston Hall. Midway between the wars a Philosophy lecturer started the Musical Society; chamber concerts were given, at first by undergraduates, but later by professional quartets. After the second war, the Choir was performing rare and difficult things like Purcell's *Dioclesian*. This young department has greatly improved the cultural life of the University. A three-year course in Music may be read, as part of the General Arts degree; and in 1951 regulations for degrees in Music, B.Mus. (a postgraduate course) and D.Mus., were approved. The Choral Society (450 members) and Orchestra (70 members) have been partners in several public performances, chiefly given in Bristol Cathedral; and they contributed substantially to the Bristol Bach Festival held in 1950. A body of about 30, the "Nonesuch Singers," have specialized in 16th-century music; other small groups of singers and players have been associated with the Departments of Greek (for the *Antigone*), French (for Racine's *Esther*), and German (for the music of Heinrich Schütz). The University chamber concerts continue during the two winter terms, organized by a committee under the Professor.

The House also contains the bulk of the Education

Department, which is concerned with the one-year training of graduate teachers, and with postgraduate research in Education, which about 25 students are pursuing for the higher degree of M.A.. Strictly speaking, many of its students are members from the inception of their degree course, but their first three years are devoted to graduating and include little time for professional work. The fourth year leads to the award of the Certificate of Education, which qualifies the candidate to teach; while a total of five years' study, with further research, may bestow the Diploma in Education. The Department has other responsibilities: after two years at the West of England College of Art, future Art teachers come here for a year of training; professional training in teaching techniques is provided for Health Visitors, Tutor Midwives, and other students; Youth Leaders receive a full-time course of one year, in preparation for service as club leaders or youth organizers. But the main concern of the department is with the 150 students, many from other universities, engaged on their year of professional training. The basis of the course is the tutorial system, both in groups of about ten and individually; the first term is devoted to theory, the second is wholly spent teaching in one of the schools over a wide area, and the third is for theory, practical problems, and the presentation of theses. There are no final written or practical examinations. A large staff is needed for the effective supervision of all this work; the department was once headed by the only woman professor in the history of the University, but the chair lapsed and was re-created in 1942.

Certain members of the department staff are also concerned in the Institute of Education (1947), which has its main offices and library in the House but has its staff scattered elsewhere. A group of intercommunicating houses in Berkeley Square is to be adapted in 1953 for the Institute, which will then vacate all its present quarters. It was set up as the central member of the various regional Schools of Education, under the inspiration of the McNair Report of 1944. Thus the training of teachers and youth leaders over a wide area came under the

supervision of the Institute, which now controls the 200 staff and 2,000 students of an interesting group of associated colleges.

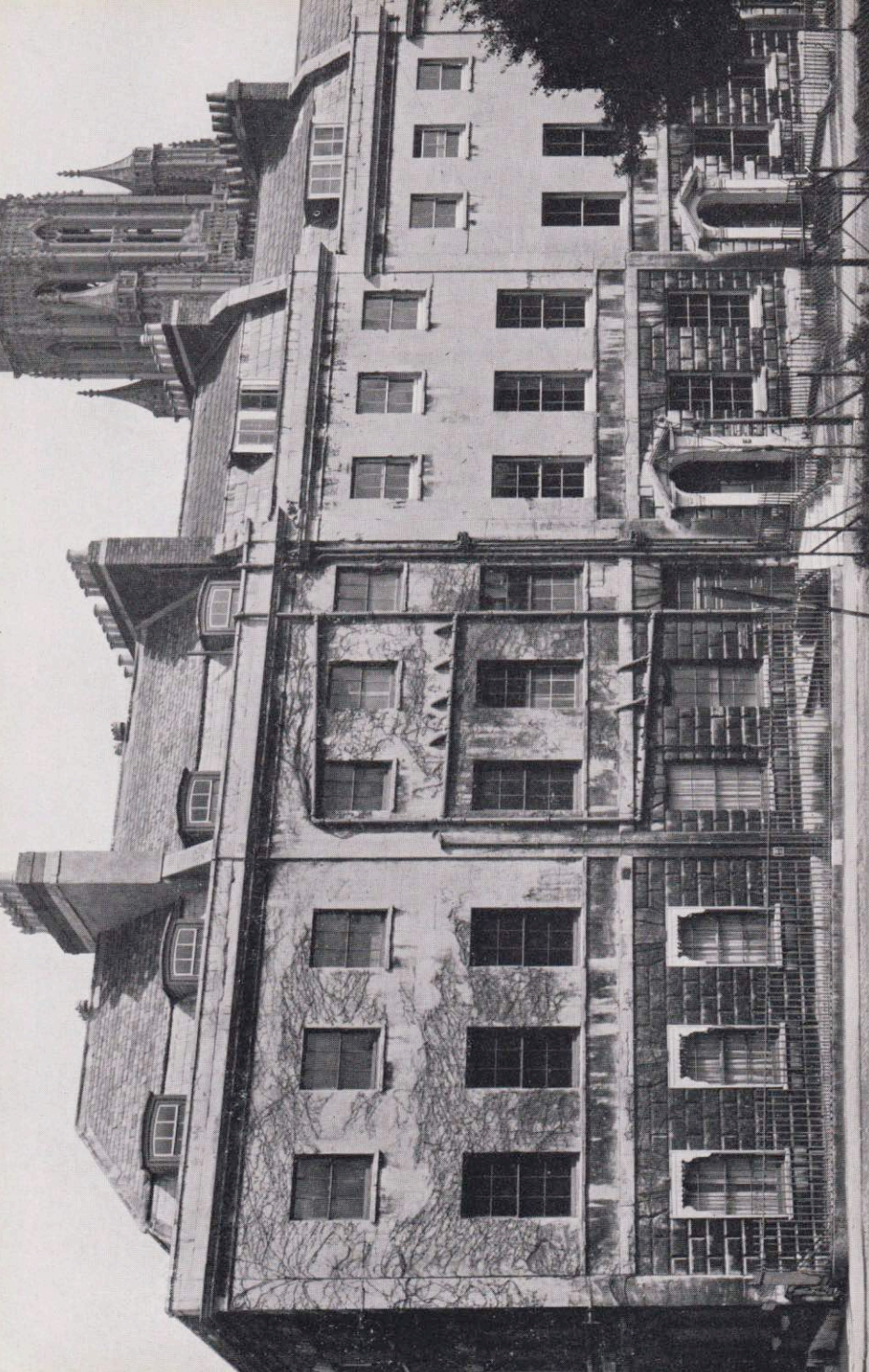
To the north-west of the House, over a lawn, is the Henry Herbert Wills Physics Laboratory, opened in 1927. In shape a reversed L, its short arm is parallel and in proportion with the House, so that the latter is not dwarfed. Its design had to fulfil many exacting requirements. It must contain efficient laboratories and lecture theatres; it must be scenically splendid, as it would be the highest building in Bristol; it must "team" with the Gothic University—and yet with the Georgian masterpiece nearby, for the House must not be spoiled. These considerations dictated the remarkable building (pl. 27) which now crowns the heights of Bristol. As in the main building, the face is of Bath and Clipsham stone, and the huge tower at the junction of the two arms takes up, and refines, the shape and details of the subsidiary tower of the University. With a correct compromise between Goth and Augustan, a harmonious Renaissance style was evolved, though the treatment was far less academic than the same architect's Perpendicular.

The main entrance (pl. 30) is under the tower, and the spandrels of the semi-circular arch are carved to show typical examples of early and modern discoveries in experimental Physics—the dispersion of sunlight by a prism (Newton, 1666) and the tracks of alpha particles from radium (Wilson, 1911). Inside, the building is a place of hard practical work, and one must not look for beauty, but the main lecture theatre, seating 300, is well carried-out in teak, and is acoustically perfect (pl. 28). The Department of Mathematics keeps company with Physics in this building, on the third floor. There are two chairs—the Henry Overton Wills Chair of Mathematics, and the Chair of Applied Mathematics, which was created in 1949. Nearly 300 students receive instruction in this department. A few of them belong to the faculty of Arts, and a large number are students of Physics or Chemistry reading Pure and/or Applied Mathematics as a subsidiary.

Some 70 students are reading for an Honours degree in Mathematics. In Pure Mathematics, the main topics of research are Algebra, Logic, and Number Theory; in Applied, the research work is concentrated on Aerodynamics.

During the twenty-six years of its existence, the H. H. Wills Physical Laboratory has grown, under the directorship first of Professor A. M. Tyndall, and later of Professor N. F. Mott, from a comparatively small institution with a total staff, academic and technical, of twenty, into one of the foremost physical laboratories in the world. The number of post-graduate workers is now 60, and they include representatives of more than 20 nations, attracted by the high quality of its contributions to knowledge, and by the diversity of the fields of research in which its members are engaged. These include the Physics of the solid state—the study of metals, crystal growth, the photographic process and related fields. The school of Theoretical Physics, which collaborates with a group of experimenters in these investigations, has a high international reputation. It has also attracted the interest of several large industrial organisations, which have encouraged it by considerable financial support. The recent award (1950) of the Nobel Prize in Physics to Professor C. F. Powell is a sufficient indication of the reputation of another large group, working under him on the fourth floor of the laboratory. New forms of matter have been found by his method of recording the tracks of atomic particles in a photographic plate. Its present application to the study of cosmic rays with the aid of high-altitude balloons is attracting wide interest. Another group, aided by the Nuffield Foundation, is concerned with Optics, and more especially with the development of a powerful reflecting microscope. The successful production of this instrument involved the design and construction of special machines of great precision and complexity, for grinding and polishing non-spherical surfaces. The laboratory is also equipped to make experiments with liquid hydrogen and liquid helium. Although its resources in this respect are not as large as at some centres, it is making





important contributions to the study of the properties of liquid helium and of solids at very low temperatures, near the absolute zero.

Below the Fort are University properties in Tankards Close; then, through the site of the future Medical School, downhill and eastwards to the Bristol Royal Infirmary and to the University Dental Hospital in Lower Maudlin Street, a well-equipped building in brick (architect, Eustace Button, 1940), which replaced the two Dental departments in the Infirmary and the General Hospital (pl. 29). Many patients attend the Hospital for treatment, and this gives the Dental students valuable opportunities for experience. The School has three departments, Dental Prosthetics, Dental Surgery, and (1947) Children's Dentistry. One important line of research in progress is investigation into the structure of the teeth by the use of tissue-culture and X-ray methods. There are plans for a museum of dental anatomy and pathology. The University awards the degree of Bachelor of Dental Surgery, and there is a Diploma of Dental Surgery.

Returning westwards to the University, one meets first, on the southern face of the triangle and separated from the main buildings by a car-park, the School of Veterinary Science. Increased facilities for veterinary education have long been needed, and new schools have been established at Cambridge and Bristol since the war to meet this end. The University is well placed for this responsibility, for Bristol lies in the centre of a great dairy-farming area. The School will enable the University to extend its contribution to the agricultural life of the region. In the pre-clinical stage, the studies of the Medical and the Veterinary student have much in common, so Bristol was already equipped for much of the initial instruction. A number of Medical and Science departments, therefore, play a part in the course, and their cooperation is valuable; the School is at present part of the Faculty of Medicine, and gains by being fully integrated in the life

of the University, instead of being merely vocational. This 1950 building in Park Row (Ralph Brentnall, architect) provides for pre-clinical subjects not available in other departments. Here Veterinary Anatomy and Veterinary Physiology are studied, and lectures on Animal Management and Animal Husbandry are given. The School has an annual entry of 30 students, but only one applicant in ten can be accepted. The University has been granted an Order of Council under Section I of the Veterinary Surgeons Act, 1948, whereby anyone who graduates as a Bachelor of Veterinary Science is eligible for membership of the Royal College of Veterinary Surgeons. The pre-clinical School is officially a "temporary" building; certainly it is permanent enough in appearance, except perhaps for the roof, and, while making no claims to artistic distinction, is not unpleasing. The interior is impressive, with well-proportioned rooms, carefully-designed lighting, and a cheerful colour-scheme. The laboratories, museum, and private rooms are all alike excellent (pl. 32). There are facilities for the use of X-rays in teaching and research. In the court behind the building (pl. 31) there are loose-boxes for keeping animals. In the past, veterinary research has been most concerned with pathological and bacteriological questions, and comparatively little attention has been devoted to veterinary anatomy, physiology, and biochemistry. The School is well provided with research accommodation to pursue such work, and research at present in progress in Veterinary Anatomy includes investigation of the early development of embryos and placentae as part of the study of the causes of sterility, studies on the theme of the relation of form to function, and the study of bone-growth by means of X-ray photography.

The clinical stage can be catered for only in the country, and instruction in the welfare and disease of farm stock takes place at Langford House (pl. 33), the home of the Veterinary Field station, pleasantly situated at the foot of the Mendips, some 14 miles from Bristol. Here there is a University farm, and laboratories for Veterinary Medicine and lecture-rooms

are being built. The Langford House estate also provides accommodation for Messrs. Horlicks' Cattle Breeding Centre and for the Ministry of Agriculture's Veterinary Investigation Service, for which new laboratories are being erected. It is most fortunate that the School will be able to work in close association with these organizations.

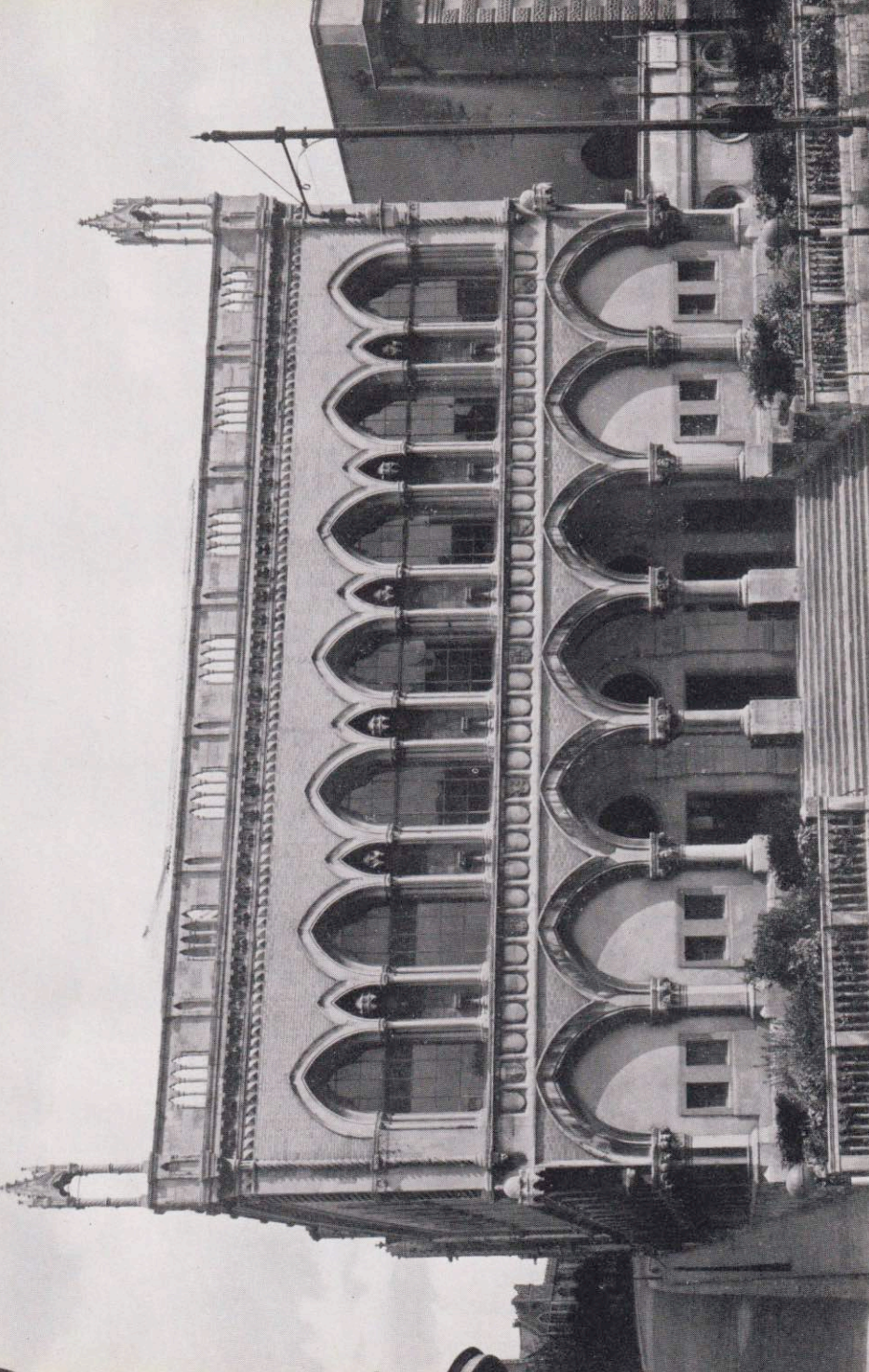
It will be convenient to mention here the other Science departments of the University, though they are at some distance. Horticultural Science laboratories have recently been opened in Leigh Woods, at Bracken Hill, where a post-graduate Diploma course in Horticultural Science is held. The laboratories cooperate closely with the Long Ashton Research Station and with the University Gardens organization. The Diploma course lasts four terms; shorter courses are also planned, and it is hoped to provide facilities for a limited number of research students. Activities so far have been confined mainly to the planning and equipment of laboratories, and to providing teaching accommodation in the gardens. Research on fungal parasitism and the water economy of plants growing under glass is projected. Students will find employment in horticultural research and advisory work at home and abroad.

The Long Ashton Research Station (pl. 34) is one of the two national research institutes concerned primarily with problems of fruit-growing; it is also the research centre of the cider industry. The National Fruit and Cider Institute was founded in 1903; the next year it leased small premises at Long Ashton, a few miles from Bristol centre on the Clevedon road. Cider was the main concern till 1912, when new arrangements much extended the scope of enquiry. An Agricultural and Horticultural Research Station was established, of which the Institute formed a part, and the University was made responsible for its administration; the Long Ashton site was purchased, and new laboratories and a cider factory were built. The Station undertook research on problems of fruit culture and the practical control of diseases and pests of fruit trees, in addition to the subject of cider. There are now

about 120 acres of field experiments at Long Ashton, and the Station has established experimental cider fruit orchards on private farms, particularly in the cider-making counties of the west. The work of the Station has much increased the knowledge of fruit cultivation, and has proved of such general interest that it draws visitors from the U.S.A., the Continent, and India, to study methods and results. Cider fruit-growing and cider-making still get much attention, and to the local population the Station remains "The Cider Institute." The significance of all this work may be judged from the fact that during the life of the Institute cider has developed from a local farmhouse drink to a national beverage, and its making from a farmhouse occupation to an industry. The Station owes much to the long service of Professor B. T. P. Barker, the first Director.

There is another Research Station near Chipping Campden, in one of the most important fruit and vegetable areas in the country. It is the research centre of the fruit and vegetable canning industry of Great Britain, and has been associated with the University since 1921. Its task is to investigate the scientific and technical problems of canning, and its work is directed to the needs of the industry. Recent studies include high-temperature processing of canned vegetables, flat sour spoilage caused by infection after sterilization, the heat resistance of spores of thermophilic bacteria, and the testing of new varieties of fruits and vegetables for canning and quick freezing.

The University owns Nos. 21 and 22 of dignified Berkeley Square, for the Bursar's Office and other administrative work; all but the ground floor of No. 20 is now occupied by the Department of Adult Education (pl. 35). The Director and his staff of Resident Tutors—some in Bristol, some at various centres in the department's diocese—are responsible, along with Local Education Authorities, the Workers' Educational Association, and certain voluntary organizations, for adult education in the geographical counties of Gloucester, Somerset, Wilts, and west Dorset. The form of the instruction





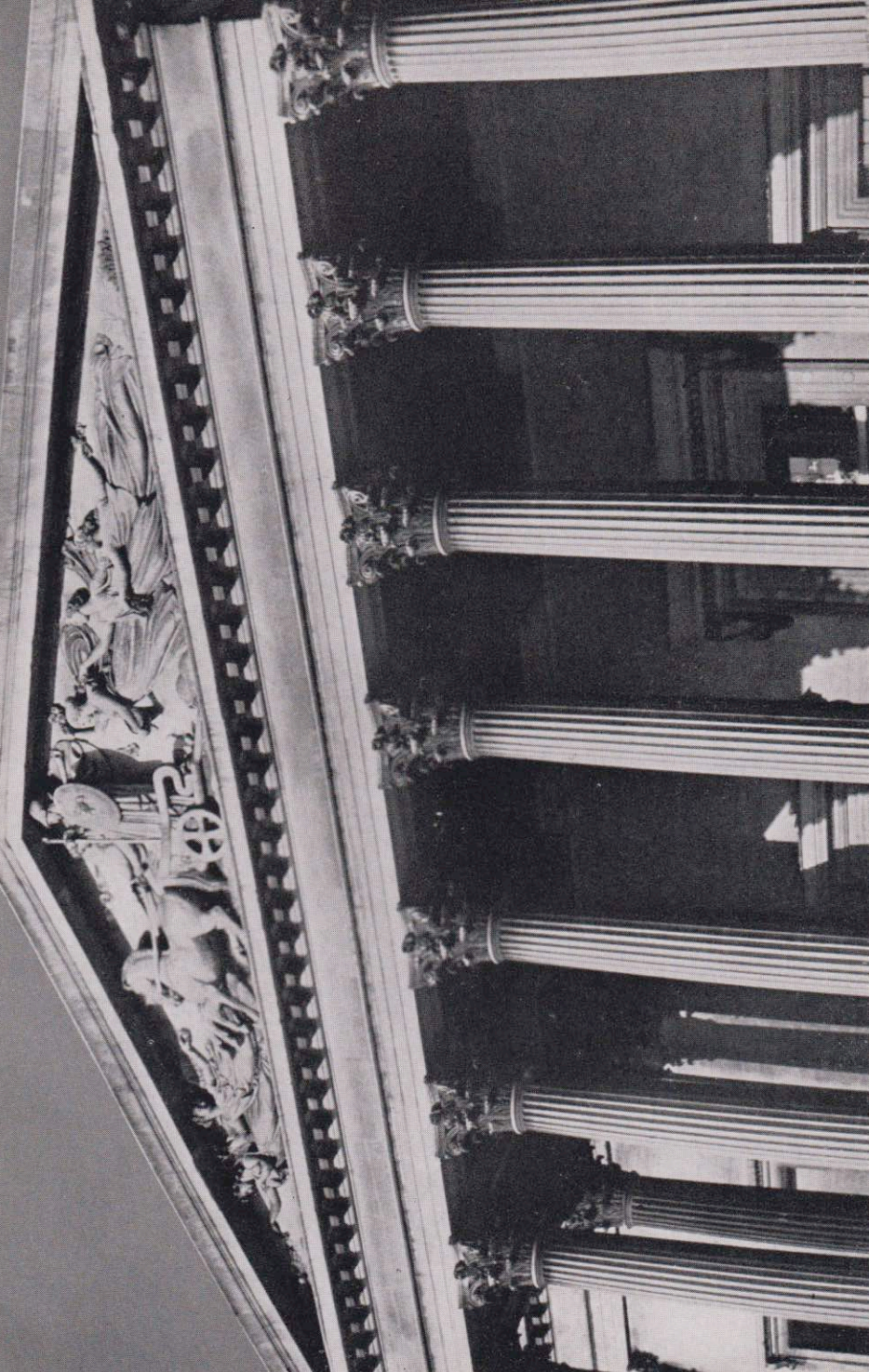
given varies according to the number of meetings: Tutorial Classes (3 years of 24 meetings apiece), Sessional Classes (of 18-24 meetings), Courses of 10-17 meetings, Short Courses, and single Lectures. The totals of all meetings, taken for the last 25 years, tell a striking tale: 1923-4, 279; 1948-9, 4,454. And the most encouraging feature of the post-war years has been the increase in courses involving sustained work over at least one whole session. The subjects of study in 1948-9 can be grouped under three main heads: Literature and Music took up 26% of the Tutorial and Sessional Classes; Psychology, Philosophy, and Religion, 21%; Economics, Sociology, History, and Current Affairs, 44%; Science and other subjects accounted for the remainder. Shorter courses (exclusive of local schemes) showed the Economics group with over 50%, and Science rising to 10%; there is now a Staff Tutor in Natural Science, operating from Bristol over the whole area. The department also organizes Summer Schools, for which Wills Hall is extremely useful; and since 1939, has been mainly responsible, along with the work of the R.A.E.C., for the education of H.M. Forces within its area. An Assistant to the Director, and two Tutors, are engaged full-time on work with the Services.

One University building on the great triangle is concerned not with teaching, but with recovery and relaxation therefrom. The south-west corner had long been occupied by the Museum of the city, but it was burnt out in the second war, and the University acquired the ruins, which Ralph Brentnall, the University architect, soon transformed into a very efficient and, within, comely Refectory for senior members and students (pl. 36). The use made of its weakened walls represents a very great achievement; the students' refectory (pl. 37) and the kitchens, below, are clean and austere, but relieved by the arched windows and some almost medieval glimpses at the back; the Senior Common Room (pl. 38) and its dining-hall, above, are full of light, and the

simple modern furnishing is set off by capricious touches of colour and by large, traditionally-framed paintings on the walls. An average of 1,000—1,100 lunches is served daily. The kitchen serves the two dining-halls, of which the lower is on a self-service system, for all who belong to the University. Morning coffee and afternoon tea are available; the Refectory is closed for only a limited period during vacations, and students from abroad or on conferences share in the benefits of this. The Senior Common Room is in constant use for private and official entertaining, and the kitchen supplies committee and departmental teas to the main building. The Refectory is controlled by a Catering Officer, and the whole department operates on a non-profit basis.

Since 1920 the home of the University Union has been the Victoria Rooms, a few minutes from the main buildings and in a commanding position. A group of prominent Bristolians formed a private company in the 1830s "to provide rooms of suitable dimensions for entertainment and other public occasions," and the first President was a diehard Tory nicknamed "The King of Bristol." The foundation-stone was laid on Queen Victoria's birthday in 1838, and Charles Dyer, who had built "Norman" and "Perpendicular" churches in Bristol, here erected a very impressive classical building in the Corinthian order; there was at first no lighting, and furniture worth only £20. The chief external feature is the portico of great Corinthian columns, with "The Advent of Morning" sculptured in the pediment (pl. 39); the rest of the building is largely masked by additions and later houses. Various functions have taken place inside—a Royal Agricultural Show in 1842; amateur dramatics by a group including Dickens, Tenniel and Wilkie Collins; and Dickens's readings from his own works, when Bill Sykes murdering Nancy threw several ladies into the vapours. What is now the car-park accommodated roller-skating (1/- per head; bring your own skates) in 1875, and lawn-tennis, also, in 1878. In 1920 Sir G. A. Wills purchased the Rooms from the company which had been owners since 1886, and gave it to the University as a





students' club. In 1934 the great hall was gutted by fire; this gave an opportunity for complete renovation, and the hall (pl. 40) was made into an impressive room, with wood-work in Indian mahogany, Australian walnut, and ebony, a sprung dance-floor, and a good stage, which has accommodated nearly all the University's dramatic productions. There are also two gymnasia, a refectory, a number of common-rooms, games rooms, and shower-baths.

The Union is the student body; every undergraduate and full-time student is a member, and must contribute an annual subscription (at present, £5) to its funds. It arose from the merging of the old Guild of Undergraduates and the Club, and remains the body which caters for all the extra-academic activities and interests of its members. Within its framework are over 90 clubs and societies, of which half are athletic, and the rest religious, cultural, social, and political; most of these will be found in other universities, but one is unusual—the Spelaeological Society, which benefits from the nearness of the Mendip caves and is learned enough to have its own headquarters in the University itself and to produce its own Journal. The Union is administered democratically through Union General meetings; Union Council, the elected executive committee, is mainly of students, headed by the President and the Lady President, but a number of members of the University staff also belong to it as Treasurers, and the Union employs a permanent Secretary. There are several sub-committees—Entertainments, Debates, Men's and Women's Athletic, etc. The Union newspaper is the "None-such News," and there is an annual magazine, "Nonesuch." Each year a special committee is set up, to organize a mass collection for a deserving charity; the various events of "Rag Week" are usually spread over four days, culminating in the fancy-dress procession of carts and cars through the city. The last week of the Summer Term, after the examinations, is "Union Week," set aside for social, cultural, and sporting events, by way of enjoyment and relaxation after the strain of studies. First-year students are welcomed and

guided in the week before their first term by a Freshers' Pre-Sessional Congress.

The University Athletic Ground is at Coombe Dingle, pleasantly situated in a residential area, with woods and hills in view; there are playing-fields of over 30 acres, tennis-courts, and a far better pavilion than the one burnt by the Suffragettes. On the programme of University extension there will be additional playing-fields, at least equal in number to those at Coombe Dingle, and probably on the Somerset side of the Suspension Bridge. At Woodland House, near the University, there are squash and fives courts, and a remedial gymnasium; badminton can be played in the Victoria Rooms. The department of Physical Education is under two lecturers, one for men and one for women, who advise the University and the Union in respect of sports facilities, and also are part-time members of staff of the Education Department, since relevant subjects figure in the postgraduate Education course. Coaching is available—in squash, swimming, tennis, and in all the games played at Coombe Dingle; skiing parties go to France at Christmas and to Scotland at Easter, and there are canoeing and climbing trips during the Summer Vacation, folk-dancing parties and courses, camp training, and courses for teachers of physical training.

Linked with this physical training and recreation is the Student Health Service, also at Woodland House. All students are required to undergo X-ray examination of the chest by mass radiography in each of their undergraduate years. They must also be medically examined each year, and must act on the advice given by the Medical Officers. About a thousand students become patients of the Physician-in-Charge, under the National Health Service Act, and undergraduates' wives and children are included in the service.

One of the acuter post-war problems has been that of student accommodation. To greatly swollen undergraduate population is added the factor of war-time devastation in Bristol, and the ultimate ideal of a mainly residential university is still far in the future. There are more than 1,000 students in





lodgings, more than there are either in the halls of residence or in their own homes. The areas involved are chiefly Clifton, Redland, Cotham, and Kingsdown, with their tall Regency and Victorian mansions. Many first-year students live thus from the outset, but others move in after a year or two in Hall. Their problems are eased by the Accommodation Office, which keeps lists of approved "digs"; not all students find their accommodation through the Office, but their own discoveries are subject to approval.

Halls of Residence in the session 1950-1 have accommodated over 600 students—250 in the two women's halls, 350 in the three men's; each has a Warden, and one or more other members of the academic staff as Sub-Wardens. The senior hall is also the oldest, and one of the loveliest, of the University buildings: Clifton Hill House, a charming Georgian mansion of 1747, occupying an arresting site below Clifton Parish Church ruins. Built by Isaac Ware for Paul Fisher, it subsequently became the home of Dr. Symonds and John Addington his son. Through the generosity of an anonymous donor, and the far-sighted initiative of Miss M. C. Staveley, Lecturer in History and Tutor to Women Students, it was established in 1909 as the first Hall of Residence. Despite accretions not quite worthy of the original, the core of the house remains a fine example of its period. The garden front is very striking, with a perron leading down in two directions to the garden (pl. 41). The garden is small, but picturesque, though its view has been impaired by later buildings; it has tulip-trees on its lawn, and a big cedar, and at the bottom are the remains of two stone gazebos. Within, the house is distinguished for its series of original Adam ceilings and overmantels; the latter, with their milk-white cherubs and other motifs, are among the best of their class (pl. 42). The house is unusually lucky in its furnishings; those responsible for equipping it when it became a Hall were at pains to obtain genuine antique pieces, and this,

combined with the lack of uniformity in the students' rooms, is bound to give the place a real character of its own, and likely to bestow the same on the student living there. An odd little "Gothic" chamber, with mock-vaulting, leads to the modern dining-hall, and so through stables (now a gymnasium) to Callender House, which was acquired later; the dining-hall replaced the intervening courtyard. This house, though slighter than Clifton Hill, has the same air of individuality; later again, the old Manor House of Clifton, on the other side of the road, was acquired, and Holland Cottage adjacent to it. The Cottage was destroyed during the heavy raids on Bristol in 1940; but a few additional places for students have been made by converting some of the larger rooms into double rooms. The Hall at present accommodates 93, as against 80 before the war.

Flanking the older Hall, on a somewhat lower level, is the larger Manor Hall for women, opened in 1932—another Wills gift and Oatley design. The severe, clean design is in no particular tradition; the garden-front has strong round arches, but the whole has no striking exterior feature (pl. 43). It is modern, and meant for comfort and cleanliness, and the interior well fulfils these requirements. All is light and space, with a southern aspect for nearly every room. The dignified dining-hall, with a dais for the high table, has its kitchens high up on the sixth floor; the common-rooms open on to a terrace above the garden. The well-fitted study-bedrooms (pl. 44) were all planned as single rooms, but since 1945 numbers have been increased from 96 to 157 by sharing in the larger rooms, and by annexes—a house in Tottenham Place, one in York Place, and Richmond House. Rodney Lodge, an old mansion at some distance, with interesting Georgian neighbours, is now to be added to Manor Hall, until additions can transform it into an independent Hall.

The largest and most imposing hall is Wills Hall, standing in trees and gardens at the top of the Downs. Its oldest portion, now mainly the Warden's residence, was the Gothic Revival mansion Downside, built by the George family. In





the 1920s the University ran two halls for men—the small Mortimer House, and Canynge Hall on Whiteladies Road, which is now used for Pathology. H. H. Wills bought the Downside estate and gave it to the University, and after his death his brother offered a Hall, which Messrs. Oatley and Lawrence had already designed, as a memorial to him. Dame Monica Wills later presented a chapel. Wills Hall was opened in 1929; designed for 150 students, the Hall and its four ancillary houses now contain about 280. This crowds the dining-hall and common-rooms but does not affect the comfort of the rooms, which are still nearly all held singly, in the main Hall.

The Hall has a quadrangle, a square lawn with three sides of houses; the fourth is partly taken up by a porch, kitchens, office, and public rooms which formed part of Downside (pl. 45). The pleasing mock-Tudor, in honey-coloured stone, of the mansion helped to fix the style of the Hall, an ultimate simplification of Tudor Gothic; three stories, gables, an occasional four-centred arch, walls studded with casement windows, bold chimneys, and drainpipe-heads with Wills badges. There is no tower, or even turret, save for a little bell-cote on Downside; the only part rising above the general level is the dining-hall (pl. 46) with magnificent oak roof-timbers and an exterior enlivened by a set of grotesques, full of humour and character and even mystery. The fittings of the senior and junior common-rooms, and the library, are excellent, and the private rooms afford a high standard of comfort. All around lie fields and trees, gardens, kitchen-gardens, orchard, tennis-courts and an inspiring view over the Severn to Wales. The chapel (pl. 47) stands a few paces outside the main Hall, somewhat cloaked in trees; the stone and the roofing-tiles resemble those of the Hall, but the very simple design is more Romanesque than Tudor. A tablet was unveiled in 1950 in memory of the 32 members of the Hall who died in the second World War—the rest of the money collected is being applied to scholarships for visits abroad, as a contribution to international understanding.

Allied to Wills are four Victorian houses, close at hand but screened by trees. One has already made history; The Holmes, acquired in 1943, entertained six important senior officers of the U.S.A. Army during a vital period of the war, and (to quote General Eisenhower's signed statement accompanying the photographs now in the entrance hall) "It was here that General Bradley spent the months during which he organized the First United States Army for the momentous assault against the Normandy beaches." The Holmes has the best of the University gardens (pl. 48)—four acres of peaceful lawns and rarities, with something of colour and interest throughout the year.

In 1946 the University opened Burwalls, just on the Somerset side of the Clifton Suspension Bridge, as a Hall for men. It claims the distinction of being the oldest occupied site in the University's possession, for its name ("Borough Walls") commemorates its origin as one of the prehistoric hill-forts commanding the Avon Gorge, and its terraces are all that remains of the eastern ramparts. The main house (1872), and a lodge and cottage at the bottom of a drive, accommodate only 40 students, but so small a unit has the advantage of strong esprit-de-corps. The site is one of the best in Bristol—one pylon of the graceful Bridge is at a stone's-throw (pl. 49); the garden falls rapidly away to the trees of the Hanging Woods, perpetually protected in National Trust hands; and there is a fine view over Bristol and to the Mendips. The large grounds have picturesque terraces, trees and flower-beds, kitchen-garden, beehives, and an abundance of squirrels and birds, since this is already countryside and the green-wood, though the University is only 20 minutes' walk away.

Wraxall Court in Somerset was taken over in 1946, on a 21 years' lease with possible breaks; the house (pl. 50) accommodates 44 men, though this includes a dormitory, and all rooms are shared. Daily transport has to be provided to Bristol, 7 miles away, and altogether the arrangement must be looked on as temporary, until one of the new halls can be built.





The Court is an old foundation several times added to; the porch bears the date 1658. Here lived Sir Ferdinando Gorges, one of the merchants who promoted the early colonies in New England.

In 1946 the University launched the Churchill Appeal, by which funds were sought to build two new Halls of Residence, one for men and one for women, and possibly to establish two new Fellowships; all to be named after the Chancellor. Tributes to Mr. Churchill, and to the worthy cause, came pouring in from Bristol and parts of the Empire; despite the economic crisis, there were many handsome gifts. The fund now stands at £270,000. Plans exist for the erection of six more halls in the Wills Hall area, the whole precinct to house 1,325 students; and no more verdant and healthful upland site for this student city could be imagined.

All students not living in a Hall, whether at home or in lodgings, must join one of the two Home Students' Societies. The Haldane Society for men, and the Fry Society for women, run most of their activities jointly, including dances and dramatic productions, and they include the bulk of the student population. A Warden and another member of staff preside over each, and each has a head student and a committee, and a room for its own use at the Union. The chief activities are concerned with the social life which they miss by not living in Hall; the big event is the annual dinner, with guests including, if possible, a member of the Fry family. For the four members of staff, the work is chiefly in the nature of help and advice to individual students.

The gardens of all the Halls, and of Langford, Bracken Hill, the Fort, and other properties, are controlled by a Gardens Committee, and run by a Superintendent of Gardens. They give the double benefit of aesthetic pleasure and profitable crops, ranging from potatoes to grapes and peaches. The grounds include the Home Farm, a 16-acre market garden with 4 acres of grazing, at Stoke Bishop; from all this

land, £3,030-worth of crops were sold in the session 1949-50 to the Catering Officer and the Halls, and in the open market.

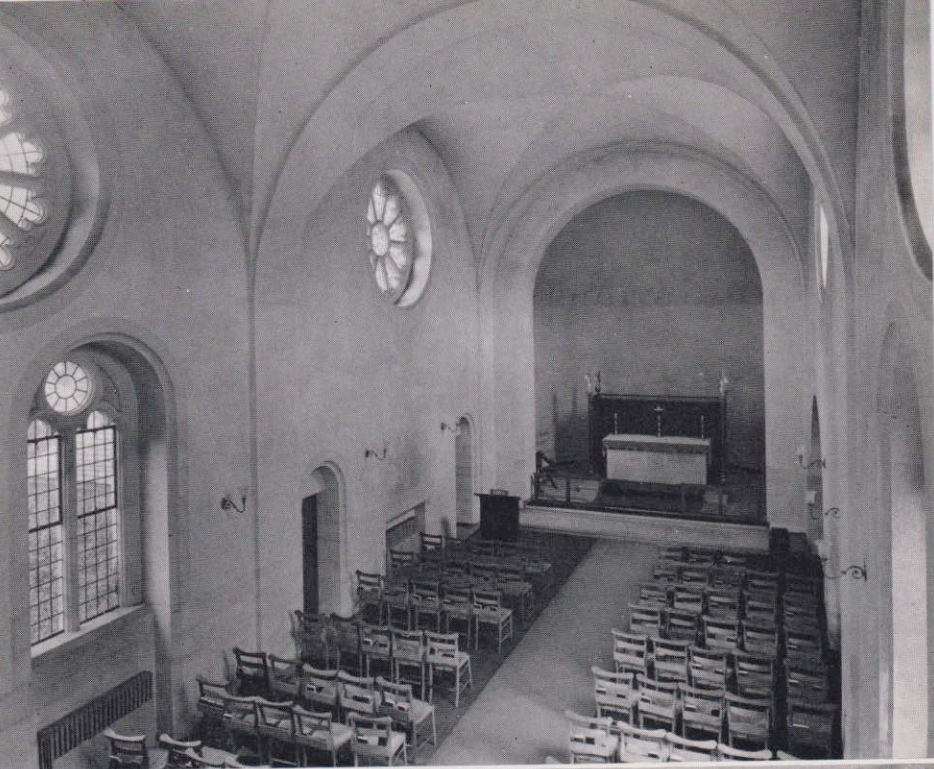
The religious life of the students is well organized and, by modern standards, thriving. Most of the early benefactors were devout men and the first President of the College was the Dean of the Cathedral. There are the usual student organizations: the Students' Christian Movement, largely Anglican, the Bristol Inter-faculty Christian Union, largely Nonconformist, and various denominational societies. Christian members of the teaching staff also meet for prayer and meditation on certain Sunday afternoons, led by some eminent churchman. A canon of the Cathedral, and a Free Church minister, have active *unofficial* chaplaincies; they also conduct the services at the chapel of Wills Hall, including early celebration of the Holy Communion every Sunday in term. Beginning-of-term services were started some years ago; there is now one at the end of the session also, and the Founder's Day service is the stateliest event of the University year. These crowded services are held in the Cathedral, and the University owes much to the clergy there for their hospitality.

A committee of senior members of the University is responsible for the well-being of colonial students; a number of students from the Dominions, also, have benefited. It has tried to ensure that as many as possible live in Hall; for all others, it finds suitable lodgings. Colonial students are readily absorbed into the student community, and take an active part in societies and sporting activities; they have also formed their own society, the Colonial and Young Dominions Association. The University Medical Officers provide overseas students with a health service in the widest sense, and there is someone to take an interest in their living conditions and in the progress of their work.

An Appointments Board, with a Secretary, exists to find

47. Top, *Wills Hall : Chapel*

48. Bottom, *Wills Hall : The Holmes Gardens*





employment, at home and abroad, for graduates and other students of the University. The position has much improved for Arts graduates with no vocation as teachers; more and more employers are visiting the University, and a greater number are keen to secure Arts men. Groups of students have been interviewed and advised on careers in commerce and industry by members of the Industrial Panel, a small group of local industrialists who are always willing to help the Board; and representatives of firms and of Government departments give advice, and invite questions, in informal talks to students nearing completion of their courses. The Board helps students to find work for the summer vacation—wherever possible, work related to their future careers; this often proves a good way for them to make up their minds about their vocation.

The University Training Corps (T.A.), with headquarters at Berkeley Square, is the successor to the O.T.C. The contingent gives training to undergraduates still liable for full-time National Service, as well as those who have completed it and have a part-time liability. There are two units—Signals and Infantry—but the training in each is intended to provide a basis for service in any branch of the army, and to help the cadet to reach commissioned rank. The Officer Commanding is a member of the academic staff of the University, and there are also one Regular and two T.A. Officers.

Bristol University Air Squadron, with two Officers, and headquarters at 82 Woodland Road, is of recent re-formation. It is an R.A.F.V.R. Squadron, which offers training to members of the University engaged on a degree course; flying training is carried out at the R.A.F. Station, Filton, and ground training at the Squadron H.Q.. A fortnight's Summer Camp during the long vacation gives intensive flying training at a selected R.A.F. station.

The chief of the old students' societies is the Association of Alumni, founded soon after the Charter, and concerned, with Convocation, in keeping a register of past students, publishing the *Alumni Gazette*, and arranging social functions.

The Hall societies are now affiliated, and there are branches in other cities.

Most of the annual lectures are memorial foundations: they bear the names of Lewis Fry (Arts and Fine Arts), Arthur Skemp (biennial; English Literature), Patrick Watson-Williams (triennial; Laryngology, Rhinology, Otology), George Hare Leonard (Fine Arts), Carey Coombs (biennial; Medical). The previous Vice-Chancellor is honoured by the Loveday Lecture; a fund provides for an annual Music lecture or chamber concert, or the income may sometimes be used for a "Bishop Butler Lecture" on Christian Ethics. Since 1905, and under the inspiration of Professor G. H. Leonard, there has been an annual series of Art Lectures illustrated by slides and supported by exhibitions in the Library; the Reception Room is always crowded for them, and they have made a great contribution to the study of Fine Arts in the University and the city. The late Miss M. P. Perry left a sum in 1944 to further such work.

It is fitting that this survey close with a tribute to the Research Society founded in honour of Edward Colston. Here we have something unique and enviable—high-minded citizens, not members of the University, yet banded together to further its work of research. In the College days, its funds could turn the scale between solvency and ruin; after the Charter, its primary work done, it gave its money and public spirit to research, the life-blood of a University, and founded Fellowships and supported higher studies in all faculties, until R. H. Mardon's gift of £5,000 in 1929 allowed the Society to form a research Trust Fund; after the second war, the Society cheerfully accepted another changed situation—research had become a national matter, and public funds were being more and more made available for its huge expenses. So the Society conceived the idea of the Symposium, at which scholars in some chosen field could be brought together for a few days in one of the Halls, to read and discuss papers, make personal contacts, and turn Bristol into the temporary headquarters of their subject; it is a gain to those assembled, to the city, and



to the University, and an honour to this deserving Society. Two dozen Countries, Dominions and Colonies have already been represented, and the subjects so far treated have been Cosmic Radiation (1948), Engineering Structures (1949), Colonial Administration (1950), and The Responsibility of Universities to the Theatre (1951).

Colston lived too early to envisage even a civic College; the later visionaries, who helped to turn it into an important and beautiful national University, are duly remembered on Founder's Day each year. At a solemn Cathedral service, the worshippers are bidden to thank God for His mercies and for all the blessings of this life, "particularly for the opportunities created in our University by the munificence of Founders and Benefactors, especially Henry Overton Wills; Albert Fry; Philip John Worsley; Lewis Fry; Henry Herbert Wills; George Alfred Wills; Mary Monica Wills; Hiatt Cowles Baker; Walter Melville Wills; Stanley Hugh Badock; Hilda Proctor Wills"..... The heritage is in safe hands. There are famous departments, some beautiful buildings, and a mounting tradition; if the first 75 years have been only an apprenticeship, the University has reached its prime a master of the craft of educating.

KEY PLAN

